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# HISTORICAL ANALYSIS OF WARTIME REPLACEMENT REQUIREMENTS; EXPERIENCE FOR SELECTED MAJOR ITEMS OF COMBAT EQUIPMENT

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WASH. D.C. 20310

26 July 1966 (Volume II)

HISTORICAL EVALUATION AND RESEARCH ORGANIZATION 2233 Wisconsin Avenue, N. W. Washington, D. C., 20007



# HISTORICAL ANALYSIS OF WARTIME REPLACEMENT REQUIREMENTS; EXPERIENCE FOR SELECTED MAJOR ITEMS OF COMBAT EQUIPMENT

A Report prepared for the Research Analysis Corporation under Subcontract FY 66-ARO1-1, dated 13 December 1965

A subcontract of RAC Prime Contract DA 44-188-ARO-1

No statements or opinions expressed in this report are to be interpreted as reflecting official views of the Department of the Army, the Research Analysis Corporation, or of any official of the United States Government

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Historical Evaluation and Research Organization 2233 Wisconsin Avenue, N. W. Washington, D. C., 20007

26 July 1966

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- 4. 28th Division
- 5. 7th Division
- 6. 96th Division
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  - Total--Per 100 Casualties h.
- Truck, 2½ Ton (all types)
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a-h, incl., as aboveRifle, .30, Mla-h, incl., as above

a-h, incl., as above7. Rifle, .30, M1903 seriesa-h, incl., as above

Machine Gun, .30 (all types)
 a-h, incl., as above

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UNIT: Fifth Army

THEATRE: Italy

TIME PERIOD: September 1943 - September 1944

DURATION: 12.25 months

			·		
ITEM .	9-30 Sept 43	1-14 Oct 43	15-28 Oct 43		
Man-Day Facto	r   1965. 4548	2043. 1713	2480. 1753	2112. 2918	1
, ,		2	3	4	 
	# .04733 @ 2.0448 (93)	.00343 .4086 (7)	.01089 1.5402 (27)	.00848 .6148 (18)	 
2 Truck, 2½ Ton (all types)	# .01985 @ .8575 (39)	.0063 <b>6</b> .7589 (13)	.00766 1.0839 (19)	.01037 .7514 (22)	1
x Tank, Light	#		.00121 .1711 (3)		
	# .01221 @ .5277 (24)		.00242 .3423 (6)	.00141 .1025 (3)	
4.Carbine, .30, Ml	# .02443 @ 1.0554 (48)	.03524 4.2031 (72)	.00968 1.3691 (24)	.01178 .8538 (25)	6
	# .02188 @ .9455 (43)	.00343 .4086 (7)	.00968 1.3691 (24)	.01131 .8197 (24)	2
6 Rifle, .30, Ml	# .07379 @ 3.1882 (145)	.09496 11.3252 (194)	.00081 .1141 (2)	.00660 .4781 (14)	1.
7 Rifle .30, M1903 Series (less snipers)	# .05496 @ 2.3747 (108)	.03671 .4.3783 (75)	7	.00518 .3751 (11)	
	# .04885 @ 2.1108 (96)	.01615 1.9264 (33)	.01008 1.4261 (25)	.00754 .5464 (16)	1.
	#   @		.00040 .0570 (1)	.00141 .1025 (3)	(
0 Howitzer, 155 mm	#			.00141 .1025 (3)	-
l Mortar, 81mm, Ml	# .02443 @ 1.0554 (48)	.02252 2.6853 (46)	.00161 .2282 (4)		1
5 Generating Unit, M5	# @				
#loss per 1000 man-days @loss per 100 casualties			1:	1	

ATTACK

		ATTACK					
43 29 Oct-10N 2122. 2928	10v 11-26 Nov 4 43 2490. 1938	3 27 Nov-9 Dec 43 2671. 2889		21Jan-30Mar 44 13469. 21,768	14May-10Jun 44 6583. 16,613	11. n-22Jul 44 7813. 9442	23Jul- 416 108
4	5	. 6	7	8	9	10	11
.00848 .6148 (18)		.01385 1.2807 (37)	.01426 2.0711 (109)	.04588 2.8390 (618)	.03327 1.3182 (219)	.05209 4.3105 (407)	.02 11.37 (12
.01037 .7514 (22)	.01165 1.4964 (29)	.00824 .7615 (22)	.01243 1.8050 (95)	.03571 2.2097 (481)	.01534 .6080 (101)	.04953 4.0987 (387)	.05 21.09 (22
=	.00080 .1032 (2)	.00075 .0692 (2)		.00260 .1607 (35)	.00972 .3852 (64)	.00602 .4978 (47)	3.79 (41
.00141 .1025 (3)	.00241 .3096 (6)		.00262 .3800 (20)	.00928 .5742 (125)	.03600 1.4266 (237)	.01216 1.0061 (95)	1.38
.01178 .8538 (25)	05141 6.6047 (128)	===	.04134 6.0042 (316)	.10001 6.1880 (1347)	.00076 .0301 (5)	.19314 15.9818 (1509)	.1. 51.34 (5
.01131 .8197 (24)	.02209 2.8380 (55)	.02059 1.9038 (55)	.01923 2.7931 (147)	.04959 3.0687 (668)	.06046 2.3957 (398)	.04582 3.7916 (358)	.0. 7.0 (7
.0066 .4781 (14)	0 .01044 1.3416 (26)	.00262 .2423 (7)	.09720 14.1174 (743)	.09214 5.7010 (1241)	.03357 1.3303 (221)	.32753 27.1023 (2559)	.2 108.4 (1
.00518 .3752 (11)	.00401 .5160 (10)	.00075 .0692 (2)	.02368 3.4391 (181)	.04833 2.9906 (651)	.00410 .1625 (27)	.20978 17.3586 (1639)	91.0
3 .0075 .5464 (16)		.00449 .4154 (12)	.01478 2.1471 (113)	.04143 2.5634 (558)	.03539 1.4025 (233)	.03264 2.7007 (255)	.0 9.3 (1
0 .0014 .1029 (3)		.00150 .1385 (4)	==	.00171 .1057 (23)	.00046 .0181 (3)	.00077 .0635 (6)	.1
.001 .102 (3)		==		.00044 .0276 (6)	.00152 .0602 (10)	.00090 .0741 (7)	
===	.00120 .1548 (3)	.00150 .1385 (4)	.00118 .1710 (9)	.00520 .3262 (71)	.00365 .1445 (24)	.00448 .3707 (35)	-:
=	===	.00037 .0346 (1)		.00030 .0184 (4)	==	.00128 .1059 (10)	_
						2	

	and the second s					
14May-10Jun 44 6583.	1.1.7 cm - 2 2 dul 44 7813.	23Jul-19Aug 44 4162.	20Aug-16Sept 44 3995.		31Mar-13May 44 9670.	
					5363	
,	10	11	12		1	
.03327 1.3182 (219)	.05209 4.3105 (407)	.02955 11.3783 (123)	.04080 5.3060 (163)		.01675 3.0207 (162)	
.01534 .6080 (101)	.04953 4.0987 (387)	.05478 21.0916 (228)	.08110 10.5469 (324)		.01541 2.7783	
.00972 .3852 (64)	.00602 .4978 (47)	.00985 3.7928 (41)	.01051 1.3672 (42)		.00031 .0559 (3)	
.03600 1.4266 (237)	.01216 1.0061 (95)	.00360. 1.3876 (15)	.00726 .9440 (29)		.00289 .5221 (28)	
.00076 .0301 (5)	.19314 15.9818 (1509)	.13335 51.3413 (555)	.10463 13.6068 (418)		.04891 8.8197 (473)	
.06046 2.3957 (398)	.04582 3.7916 (358)	.01826 7.0305 (76)	.01051 1.3672 (42)		.01458 2.6291 (141)	
.03357 1.3303 (221)	.32753 27.1023 (2559)	.28159 108.4181 (1172)	.36871 47.9492 (1473)		.02771 4.9972 (268)	
.00410 .1625 .(27)	.20978 17.3586 (1639)	.23642 91.0268 .(984)	.17797 23.1445 (711')		.00972 1.7527 (94)	
.03539 1.4025 (233)	.03264 2.7007 (255)	.02427 9.3432 (101)	.03179 4.1341 (127)		.01189 2.1443 (115)	
.00046 .0181 (3)	.00077 .0635 (6)	.00048 .1850 (2)	.00075 .0977 (3)			
.00152 .0602 (10)	.00090 .0741 (7)	.00048 .1850 (2)	.00025 .0325 (1)		.00362 .6526 (35)	
.00365 .1445 (24)	.00448 .3707 (35)	.00240 .9251 (10)	.00451 .5859 (18)		.00165 .2983 (16)	
=	.00128 .1059 (10)	.00096 .3700 (4)	.00050 .0651 (2)		.00021 .0373 (2)	
	.03327 1.3182 (219) .01534 .6080 (101) .00972 .3852 (64) .03600 1.4266 (237) .00076 .0301 (5) .06046 2.3957 (398) .03357 1.3303 (221) .00410 .1625 (27) .00410 .1625 (27) .00539 1.4025 (233) .00046 .0181 (3) .00152 .0602 (10) .00365 .1445	44 6583. 7813. 9442  9 10  .03327 .05209 1.3182 4.3105 (219) (407) .01534 .04953 .6080 4.0987 (101) (387)  .00972 .00602 .3852 4.978 (64) (47)  .03600 .01216 1.4266 1.0061 (237) (95)  .00076 .19314 .0301 15.9818 (5) (1509)  .06046 .04582 2.3957 3.7916 (398) (358)  .03357 3.7916 (398) (358)  .03357 3.7916 (398) (358)  .03357 3.7916 (398) (358)  .03357 3.7916 (398) (358)  .03357 .32753 1.3303 (221) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00410 .20978 .1625 (27) (2559)  .00440 .0077 .0181 .0635 (3) (6)  .00152 .00090 .0741 (10) (7)  .00365 .00448 .3707 (24) (35)	44       44       44       44       44       462.       1081       9       10       11         .03327       .05209       .02955       1.3182       4.3105       11.3783       (219)       (407)       (123)         .01534       .04953       .05478       20916       21.0916       20918       201826	44         44         44         3995.           16,613         9442         1081         3072.           9         10         11         12           .03327         .05209         .02955         .04080           1.3182         4.3105         11.3783         5.3060           (219)         (407)         (123)         (163)           .01534         .04953         .05478         .08110           .6080         4.0987         21.0916         10.5469           (101)         (387)         (228)         (324)           .00972         .00602         .00985         .01051           .3852         .4978         3.7928         1.3672           (64)         (47)         (41)         (42)           .03600         .0216         .00360         .00726           1.4266         1.0061         1.3876         .9440           (237)         (95)         (15)         (29)           .00076         .19314         .13335         .10463           .0301         15.9818         51.3413         13.6068           (5)         (1509)         (555)         (418)           .06046	44	6583, 44

1

INIT: SEVENTH ARMY THEATRE: ETO TIME PERIOD: 5 November 1944 - 12 May 1945

DURATION:	6.75 Months	

5-11Nov44 12-18Nov44 19-25Nov44 26Nov-2Dec 3-9Dec 44 3-16Dec44 :

	!!		i	19-25Nov44			
TTEM Man-Day Facto Casualtie		1463. 1700	1463. 1386	1451. 2568	1508. 2968	1492.   3918 <del> </del>	1498. 2944
	# [a	.01777 1.5294 (26)	.0013 <b>7</b> .8658 (12)	.01172 .6620 (17)	.01658 1.8423 (25)	.04424 1.6845 (66)	 
	# [a	.00342 .2941 (5)	.00410 .4329 (6)	.00276 .1558 (4)	.00265 .1348 (4)	.00536 .2041 (8)	.00935 .4755 (14)
	# @	.00342 .2940 (5)	.0013 <b>7</b> .1443 (2)	.00069 .0389 (1)	.00066 .0337 (1)	.00201 .0766 (3)	.00467 .2378 (7)
Tank, Medium	# [a	.00752 .6471 (11)	.00410 .4329 (6)	.00414 .2336 (6)	.00199 .1011 (3)	.02882 1.0975 (43)	.01802 .9171 (27)
Carbine, 30, Ml	#    [a	.26726 23.0000 (391)	.07450 7.8644 (109)	.20400 11.5265 (296)	.07560 3.8410 (114)	.22721 8.6524 (339)	.23105 .4.8098 (436)
Rifle, .30, BAR, M1918	#    @	.04443 3.8235 (65)	.01777 1.8759 (26)	.05927 3.3489 (86)	.03780 1.9205 (57)	.03418 1.3017 (51)	.06208 3.1599 (93)
Rifle, .30, Ml	# !! @ !!	.25427 21.8823 (372)	.18318 19.3362 (268)	.00758 .4283 (11)	.01658 .8423 (25)	.03552 1.3527 (53)	.13618 6.9293 (204)
	# @	.01846 1.5882 (27)	.00410 .4329 (6)	.00414 .2336 (6)	.00199 .1011 (3)	.01340 .5105 (20)	.02937 1.4946 (44)
Machine Gun, .30 (all types)	#    @	.01709 1.4706 (25)	.01640 1.7316 (24)	.02757 1.5576 (40)	.10459 .7412 (22)	.03485 1.3272 (52)	.03404 1.7323 (51)
Howitzer, 105 mm	# @		.00068 .0721 (1)			.00067 .0255 (1)	
Howitzer, 155 mm	# [a					 	
Mortar, 81 mm	#	.00273 .2353 (4)		.00069 .0389 (1)	     	.00469 .1787 (7)	.00200 .1019 (3)
Radio Set, SCR-300	# @	.01299 1.1176 (19)	.00273 .2886 (4)	.01861 1.0506 (27)	.01127 .5728 (17)	.01408 .5360 (21)	.01535 .7812 (23)
Radio Set, SCR-608	# [a	!				.00067 .0255 (1)	
Radio Set, SCR-610	#	.00273 .2353 (4)	.00205 .2164 (3)	.00138 .0778 (2)	.00133 .0674 (2)	.00871 .3318 (13)	.00601 .3057 (9)
Power Unit (all types)	# [a]	.00068 .0588 (1)		60 10 00 00 60 10 60 10			
Generating Unit, M5 3 KW	#@					1 1 1 1 1	.00067 .0340 (1)

# Losses per 1,000 man-days
@ Losses per 100 casualties

ATTACK

		21-2/Jan45	28Jan-3Feb	4-10Feb45	ll-17Feb45	18-24Feb45	4-10Mar45	11-17Mar45	; ±8
1498. 2944	1492. 2631	2054. 4045	1978. 2500	2224. 2345	2254. 1143	2105. 1594	1895. 1262	2257. 1175	===
	.04424 2.5085 (66)	.03116 1.5822 (64)	.01163 .9200 (23)	.05980 5.6716 (133)	.03638 7.1741 (82)	.03800 5.0188 (80)	.03852 5.7845 (73)	.03013 5.7872 (68)	
.00935 .4755 (14)	.00268 .1520 (4)	.00438 .2225 (9)	.00101 .0800 (2)	.04137 3.9232 (92)	.03416 6.7367 (77)	.05036 6.6499 (106)	.05119 7.6862 (97)	.03589 6.8936 (%1)	
.00467 .2378 (7)	.00134 .0760 (2)	.00633 .3214 (13)	.00152 .1200 (3)	.04272 .2132 (5)	.00266 .5249 (6)		.00528 .7924 (10)	.00709 1.3517 (16)	
01802 9171 (27)	.00871 .4941 (13)	.02629 1.3350 (54)	.00859 .6800 (17)	.01079 1.0234 (24)	.00488 .9624 (ll)		.00633 .9509 (12)	.01152 2.2128 (26)	
29105 8098 (436)	.32105 18.2060 (479)	.27848 14.1409 (572)	.20779 16.4400 (411)	.96493 91.5139 (2146)	.37400 73.7533 (843)	.21805 28.7955 (459)	.15673 23.5341 (297)	.23970 46.3425 (541)	3
06208 1590 (93)	.0254 <b>7</b> 1.4443 (38)	.04917 2.4969 (101)	.04449 3.5200 (88)	.08498 8.0597 (189)	.05989 11.8110 (135)	.02803 3.7014 (59)	.02269 3.4073 (43)	.02260 4.3404 (51)	
13618 9293 204)	.03418 1.9384 (51)	.41577 21.1125 (854)	.17391 13.7600 (344)	2.13714 202.6866 (4 <b>7</b> 53)	.92414 182.3971 (2083)	.31876 42.0954 (671)	.14406 21.6323 (273)	.30616 58.8085 (691)	
02937 4946 (44)	.01810 1.0262 (27)	.00925 .4697 (19)	.00910 .7200 (18)	.01664 1.5778 (37)	.04525 8.9239 (102)	.00618 .8156 (13)	 	.07931 15.2340 (179)	I I I I
03404 7323 (51)	.04491 2.5466 (67)	.06134 3.1122 (126)	.02882 2.2800 (57)	.02878 2.7292 (64)	.01242 2.4497 (28)	.02898 3.8269 (61)	.01478 2.2187 (28)	.01595 3.0638 (36)	
						.00048 .0627 (1)	   	! ! !	
						.00190 .2509 (4)	.00053 .0792 (1)	.00044 .0851 (1)	
00200 1019 (3)	.00402 .2280 (6)	.00828 .4199 (17)	.00152 .1200 (3)	.00764 . <b>7</b> 249 (17)	.00222 .4374 (5)	.00855 1.1292 (18)	.00369 .5547 (7)	.00310 .5957 (7)	1
01535 7812 (23)	.01877 1.0642 (28)	.02142 1.0868 (44)	.01719 1.3600 (34)	? ? ?	RED	02565 .3.3877 . (54)	.02164 3. <b>2</b> 488 (41)		I I I I
		.00049 .0247 (1)	 	?	ORT COVE	1882			1 1
00601 3057 (9)	.00670 .3800 (10)	.00097 .0494 (2)	.00202 .1600 (4)	???	LTY DAY 11	00855 .1.1292 . (18)	.00369 .5547 (7)		1 1 1
		 		? <b>?</b> ?	CASUA		.00053 .0792 (1)		
00067 0340 (1)						.00048 .0627 (1)	.00106 .1585 (2)		1 1 1

DEFENSE

5 1	10-2/Man45	25_31Man45	1-7 7nn 45	8-14Apr 45	15-21 Apr45	22-28Apr45	29Apr-5May	24-30Dec44   3	
	2502. 4734	2362. 2828	2030. 1439	2056. 2979	1974. 3454	2083. 2430	2136. 1375	1687. 1240	17 29
	.02078 1.0984 (52)	.03345 2.7935 (79)	.02808 3.9611 (57)	.04086 2.8197 (84)	.06282 3.5900 (124)	.06193 5.3086 (129)	.05009 7.7818 (107)	.00771 1.0484 (13)	
-	.02278 1.2041 (57)	.02710 2.2631 (64)	.02759 3.8916 (56)	.02529 1.7456 (52)	.03647 2.0845 (72)	.04657 3.9918 (97)	.12406 19.2727 (265)	.00474 .6452 (8)	-
		.00169 .1414 (4)	.00492 .6949 (10)	.00681 .4700 (14)	.00760 .4343 (15)	.01056 .9054 (22)	.00328 .5091 (7)	.00237 .3226 (4)	:
1	.00799 .4225 (20)	.01524 1.2730 (36)	.01921 2.7102 (39)	.00876 .6042 (J.8)	.02128 1.2160 (42)	.01632 1.3992 (34)	.01685 2.6182 (36)	.00593 .8065 (10)	-
	.06635 3.5065 (166)	.12828 10.7143 (303)	.22906 32.3141 (465)	.11430 7.8886 (235)	.19098 10.9149 (377)	.11714 10.0412 (244)	.09223 14.3273 (197)	.18139 24.6774 (306)	15.
	.01439 .7605 (36)	.03006 2.5106 (71)	.02808 3.9611 (57)	.01313 .9063 (27)	.02482 1.4186 (49)	.02400 2.0576 (50)	.01826 2.8364 (39)	.01660 2.2581 (28)	1:
	03357 1.7744 (84)	.18205 15.2051 (430)		.14786 10.2048 (304)	.11094 6.3405 (219)	3.24820 278.4362 (6766)	.00562 .8727 (12)	.05276 7.1774 (89)	5. (
	.00520 .2746 (13)	.00804 .6719 (19)	.00837 1.1814 (17)	.00827 .5707 (17)	.00405 .2316 (8)	.01104 .9465 (23)	.00094 .1455 (2)	.01245 1.6935 (21)	1.
	.01079 .5708 (27)	.01736 1.4498 (41)	.03941 5.5594 (80)	.02919 2.0141 (60)	.01317 .7528 (26)	.03601 3.0864 (75)	.01405 2.1818 (30)	.03794 5.1613 (64)	
					.00051 .0290 (1)	.00096 .0823 (2)	.00047 .0727 (1)		-
		.00042 .0354 (1)	.00049 .0695 (1)	.00049 .0336 (1)		.00192 .1646 (4)			
	.00120 .0634 (3)	.00212 .1768 (5)	.00197 .2780 (4)	.00438 .3021 (9)	.00304 .1737 (6)	.00192 .1646 (4)	.00749 1.1636 (16)	.00237 .3226 (4)	
	.01878 .9928 (47)		.02167 3.0577 (44)	.02529 1.7456 (52)	.02685 1.5345 (53)	i	02294	.00948 1.2903 (16)	
						Z			
	.00440 .2324 (11)		.00443 .6254 (9)	.00389 .2685 (8)	.00355 .2027 (7)	TY F		.00059 .0806 (1)	
	.00200 .1056 (5)			.00097 .0671 (2)	.00101 .0579 (2)	CAS .	00047		
	.00080 .0422 (2)	.00127 .1061 (3)			===	.00096 .0823 (2)	.00187 .2909 (4)		
=								_ =========	

in the second	DEFEN	ISE	ed Shill and Allie	WIT	HD	RAWAL	And the second	LIMITED	SURRENDER	Acherin marking
	24-30Dec44	3lDec-6Jan	7	-13Jan4	5	14-20Jan4	5	25Feb-3Ma	r 6-12May45	
:	1687. 1240	1754. 2900		1273. 4071		1813. 4177		1947. 1362	2191. 1142	
	.00771 1.0484 (13)	.01311 .7931 (23)	The state of the s	.10369 3.2424 (132)	9	.02482 1.0773 (45)		.02671 3.8179 (52)	.05568  10.6830   (122)	1
to special design (white following the same parties of the same pa	.00474 .6452 (8)			.0212] .6632 (27)	L	.00993 .4309 (18)		.0554 <b>7</b> 7.9295 (108)	.15061 28.8967 (330)	2
and their tells were true true to an and	.00237 .3226 (4)	.00285 .1724 (5)	When they then the true to the	.00864 .2702 (ll)	ļ. 1	.00221 .0958 (4)			.00365 .7005 (8)	x
o spare and a series from the series of the	.00593 .8065 (10)			.02042 .6337 (26)	1	.01986 .8619 (36)		.00719 1.0279 (14)	.00822 1.5762 (18)	3
	.18139 24.6774 (306)	.26169 15.8276 (459)		.25137 7.8605 (320)	1 1 1	.16713 7.2540 (303)		.15562 22.2467 (303)	.06298 12.0841 (138)	4
	.01660 2.2581 (28)	.01995 1.2069 (35)	The second secon	.03771 1.1791 (48)	1	.05130 2.2265 (93)		.04520 6.4611 (88)	.02419 4.6410 (53)	5
	.05276 7.1774 (89)	.08780 5.3103 (154)		.07698 2.4073 (98)	1	.04302 1.8674 (78)	The state of the s	.11351 16.2561 (221)	.00685 1.3135 (15)	6
	.01245 1.6935 (21)	.02052 1.2414 (36)		.05263 .6458 (67)	1	.00055 .0239 (1)		.00154 .2203 (3)	 	7
	.03794 5.1613 (64)	.01368 .8276 (24)	3	.12333 .8565 (157)	1 1	.03916 1.6998 (71)		.02979 4.2584 (58)	.01871 3.5902 (41)	8
				~ ~ ~ ~	1 1 1	.00055 .0239 (1)	The state of the s			9
			- You Craim group lines that the state of th		1			.00051 .0734 (1)	.00046 .0876 (1)	10
	.00237 .3226 (4)			.01493 .4667 (19)	1	.00662 .2873 (12)	the state of the s	.00873 1.2482 (17)	.00091 .1751 (2)	11
	.00948 1.2903 (16)	.00513 .3103 (9)	1	.01807 .5650 (23)	:	.01489 .6464 (27)	Committee of the commit	.02671 3.8179 (52)	.01780 3.4151 (39)	12
		.00057 .0345 (1)		00157 0491 (2)	1			.00205 .2937 (4)		13
	.00059 .0806 (1)	.00114 .0690 (2)		01728 5404 (22)		.00496 .2155 (9)		.00719 1.0279 (14)	.00091 .1751 (2)	14
	==			00079 0246 (1)		.00110 .0479 (2)		.00051 .0734 (1)		xx
		===								15
	2			=====	==	======	===			

UNIT: 45th Infantry Division THEATER: Italy  Man-Day Factor Casualties	DURATION:	D: 10 Septem 298 Days/9.7 1Nov-31Dec43 884.5 2207	5 Months	ATTACK 23May-3June 180. 44	DEFENSE 3Feb-4Mar4 455.2 2898
1 Truck, ½ Ton 4x4 C&R	.05929 2.1350 (37)	.03392 1.3593 (30)		.06111 .5814	.13401 2.1049 (61)
2 Truck, 2½ Ton (all types) #		.01470 .5890 (13)	 	.03889 .3700	.00879 .1380 (4)
3 Tank, Medium *					.04613 .7246 (21)
4 Carbine, .30, Ml #				.16667 1.5856	.23945 3.7612 (109)
5 Rifle, .30 BAR, M1918 #		i i i i		.06667 .6342	.22188 3.4852 (101)
Rifle, .30, Ml #				.23333 2.2199 (42)	.68981 10.8351 (314)
7 Rifle, .30, M1903 Series # @				.04444 .4228	.10984 1.7253 (50)
8 Machine Gun, .30 # (all types) @				.4757	.31634 4.9689 (144)
9 Howitzer, 105 mm #	.00320 .1154 (2)			0529	
10 Howitzer, 155 mm # @		·			
ll Mortar, 81 mm #			 	.01669 .1586 (3)	.04174 .6556 (19)
l2 Radio Set, SCR-300 #		   			
13 Radio Set, SCR-608 #					
L4 Radio Set, SCR-610 # @			- 1		.04174 .6556 (19)
15 Generating Unit #		, I			.00879 .1380 (4)

<sup>#--</sup>loss per 1000 man-days @--loss per 100 casualties

<sup>\*</sup>Loss records incomplete

1944 K 3June	455.2	REST 21-310ct43 169.8	REST, RESERVE, AT SEA, 1-28Jan44	L/Engaged ATTACK, DEFENSE 5Mar-15Apr44 658.3 616	REST 16Apr-18May44 495.	LIGHTLY ENGAGED 19-22May44 60. 70	PURSUIT, RESERVE 4-25Jun44 255. 255
111	.13401 2.1049 (61)	7	.03852 26.6667 (16)	.00304 .3247 (2)	.00404 .5319 (2)	.04999 4.2857 (3)	.15686 15.6863 (40)
889 00	.00879 .1380 (4)		.01204 8.3333 (5)	.00304 .3247 (2)	.00404 .5319 (2)	.01666 1.4286 (1)	.05882 5.8823 (15)
	.04613 .7246 (21)						
56	.23945 3.7612 (109)				.02222 2.9255 (11)	.06666 5.7143 (4)	.30588 30.5882 (78)
667 42	.22188 3.4852 (101)				.01818 2.3936 (9)	.01666 1.4286 (1)	.19608 19.6078 (50)
333 99	.68981 10.8351 (314)				.03030 3.9894 (15)	.08333 7.1429 (5)	.05490 5.4902 (14)
444 28	.10984 1.7253 (50)				.01616 2.1277 (8)	.01666 1.4286 (1)	.05490 5.4902 (14)
000 57	.31634 4.9689 (144)			-3	.00202 .2659 (1)	.01666 1.4286 (1)	.03137 3.1372 (8)
555 28							
							.01569 1.5686 (4)
00	.04174 .6556 (19)			.00152 .1623 (1)	.00202 .2659 (1)		.00392 .3921 (1)
				.17925 19.1558 (118)	.02020 2.6596 (10)	, eras	.08627 8.6274 (22)
	#				.01010 1.3298 (5)		.06274 6.2745 (16)
	.04174 .6556 (19)			.00608 .6493 (4)	.01414 1.8617 (7)		.14510 14.5098 (37)
	.00879			.00152 .1623 (1)	.00202 .2659 (1)		

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d pr44 3 ¦	REST 16Apr-18May44 495.   376	LIGHTLY ENGAGED 19-22May44 60.	PURSUIT, RESERVE 4-25Jun44 255.	THEATER: TIME PERIO ATTACK 15-21Aug44 112. 310	OD: 15Augús ATTACK 1-310ct44 439.	t-30November 1 PURSUIT/REST 22Aug-30Sept4	LEngATTACK 4 1-30Nov44 476.
==== 4	.00404 .5319 (2)	.04999 4.2857 (3)	.15686 15.6863	.08036 2.9032	.05467 1.2333 (24)	.04833 20.5674 (29)	.10294 7.8025 (49)
4	.00404 .5319 (2)	.01666 1.4286 (1)	5.8823 (15)	.04464 1.6129 (5)	.03872 .8736 (17)	.01000 4.2553 (6)	.06933 5.2548 (33)
1			- 1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	.02222 2.9255 (ll)	.06666 5.7143 (4)		.43750 15.8064 (49)	.18451 4.1624 (81)	.53000 225.5319 (318)	
	.01818 2.3936 (9)	.01666 1.4286 (1)	(50)	.15179 5.4839 (17)	.15034 3.3916 (66)	.07500 31.9149 (45)	
	.03030 3.9894 (15)	.08333 7.1429 (5)	5.4902		1	.07667 32.6241 (46)	
	.01616 2.1277 (8)	.01666 1.4286 (1)	.05490 5.4902 (14)		.02733 .6166 (12)	.00667 2.8369 (4)	
	.00202 .2659 (1)	.01666 1.4286 (1)	.03137 3.1372 (8)		.02050 .4625 (9)	.04833 20.5674 (29)	
					1	t 1 1 1 1	
	,		1.5686	1 i	 		
2	.00202 .2659 (1)		.3921	.00893 .3226 (1)	 		
5	.02020 2.6596 (10)	j #15		11 11 11 11 11 11 11 11 11 11 11 11 11	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	.09167 39.0070 (55)	
	.01010 1.3298 (5)		6.2745		1 1 1 1 1 1 1	.07167 30.4964 (43)	
8	.01414 1.8617 (7)	1	14.5098			.15500 65.9574 (93)	
2	.00202 .2659 (1)				 	.00167 .7092 (1)	

UNIT: 28th Division THEATER: ETO

TIME PERIOD: 1 August-27 December 1944 DURATION: 151 Days/5 Months

### ATTACK

				ATI	ACK	
Man-day Factor Casualties	1-15Aug44 229. 3418	19-26Aug44 110. 147	27Aug-2Sep 119. 153	3-10 Sep44 121. 135	12-26Sep44 189. 1776	6-8 Oct 4 49. 59
1 Truck, ½ Ton 4x4 C&R #		.04545 3.4014 (5)	.01681 1.3072 (2)		.15873 1.6892 (30)	
2 Truck, 2½ Ton (all types) #	.01310 ,0878 (3)	.00909 .6803 (1)	.01681 1.3072 (2)		.01058 .1126 (2)	
3 Tank, Medium #						
4 Carbine, .30, M1 #		.36364 27.2109 (40)	.10084 7.8431 (12)	.25620 22.9630 (31)	.59788 6.3626 (113)	
5 Rifle, .30, BAR, M1918 #			.00840 .6536 (1)		.46032 4.8986 (87)	.48980 40.6780 (24)
6 Rifle, .30, Ml #						
7 Rifle, .30, M1903 Series ## (Sniper only)					.00529 .0563 (1)	
8 Machine Gun, .30 (all #	.06987 .4681 (16)	.07273 5.4422 (8)			.22222 2.3649 (42)	.04082 3.3898 (2)
9 Howitzer, 105 mm #		,				
Howitzer, 155 mm #						
l Mortar, 81 mm, Ml #	.02183 .1463 (5)				.02645 .2815 (5)	
2 Radio Set, SCR-300 #	.23581 1.5799 (54)	.01818 1.3605 (2)			.04762 .5068 (9)	
3 Radio Set SCR-608 #						
Radio Set SCR-610 #	.03493 .2340 (8)		.01681 1.3072 (2)		.04233 .4504 (8)	
5 Generating Unit #						1

#--loss per 1000 man-days G--loss per 100 casualties

ATTACK

DEFENSI

								DEFI	71/101
0 Sep44 121. 135	12-26Sep44 189. 1776	6-8 Oct 44 49. 59	2-3 Nov 44 31. 559	10 Nov 44 15. 644	11 11 11 11 11 11 11 11 11 11 11 11 11	27-30Sep44 48. 132	1 Oct 44 16. 100	9-220ct44 230. 58	27
	.15873 1.6892 (30)		.03226 .1789 (1)	.06667 .1553 (1)		.04167 1.5151 (2)		.02609 10.3448 (6)	
	.01058 .1126 (2)						===	.00435 1.7241 (1)	
			.29033 1.6100 (9)						
25620 9630 31)	.59788 6.3626 (113)								
	.46032 4.8986 (87)	.48980 40.6780 (24)	.03226 .1789 (1)	.73333 1.7081 (11)		.10417 3.7879 (5)	.12500 2.0000 (2)	.00870 3.4483 (2)	
	.00529 .0563 (1)			.06667 .1553 (1)			.06250 1.0000 (1)	.03913 15.5172 (9)	
	.22222 2.3649 (42)	.04082 3.3898 (2)		.33333 .7764 (5)		.02083 .7576 (1)	.06250 1.0000 (1)		
	.02645 .2815 (5)								
	.04762 .5068 (9)							-	
	.04233 .4504 (8)								

e Lagran	DEFI	ENSE	,			PATROI & TRAIN		
44	9-220ct44 230. 58	270ct-lNov 99. 44 60	11-20Nov44 159. 435	1-15Dec44 Records Burned		4-9 Nov44 91. 1683	.6-27 Dec44 126. 3524	21-30
-	.02609 10.3448 (6)	 t 	.05031 1.8391 (8)			.12088 .6536 (11)	.46825 5.2497 (185)	.0 32.2 (1
-	.00435 1.7241 (1)		.01258 .4598 (2)			.02198 .1188 (2)	146825 1.6742 (59)	-
						.18681 1.0101 (17)		
			.15094 5.5172 (24)			.01099 .0594 (1)		.0 3.2 (1
500 00	.00870 3.4483 (2)	.01010 1,666 (1)	7.8161 (34)			.50549 2.3767 (46)	1.07143 3.8309 (135)	.0 35.4 (1
						1 1 1 1 1 1 1		
250 00	.03913 15.5172 (9)		.05660 2.0690 (9)					54.8 (1
250 00			.16981 6.2069 (27)			.41758 2.2579 (38)	.57143 2.0431 (72)	.0 19.3 (6
			\.	1			.09524 .3405 (12)	
								3.2
			.07547 2.7586 (12)			.09890 .5348 (9)	.11905 .4256 (15)	
	-			;				
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PATROLLING &. TRAINING	1	-	NOT ENGAGED - REST						N	T I	ENGAGED -	МС	DVING	
21-30Nov44 172. 31	: ! ! !		16-18Aug44 45. 5	-   -   -   -   -   -   -   -   -   -					Sep 15. 13	44	2-5 Oct 4 64. 53	44	23-260ct44 65. 16	
.05814 32.2581 (10)				1								I I I I I	.01538 6.2500 (1)	
			   	1 1 1										1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								1		7
.00581 3.2258 (1)			.46666 420.00 (21)	1							.20313 24.5283 (13)	3		
.06395 35.4839 (11)			1.99999 1800.00 (90)		Action prices communication and specific and					1	.01563 1.8868 (1)	3 !		1
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The state of the s					1 1 1 1		1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
.09884 54.8387 (17)				1	A control property of the state					. I		1 1 1 1 1 1 1	.03077 12.5000 (2)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
.03488 19.3548 (6)			.02222 20.00 (1)	] 	And were conductive and work and a series of the conductive an					1 1 1 1	,	1 1 1		
						appear of the second	1			1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
.00581 3.2258 (1)						is linear where there are not the same or						1 1		
			.06666 60.00 (3)			-				! ! !		1 1 1 1 1	4	
			.06666 60.00 (3)							1		1		
			.04444 40.00 (2)	22300				314 and 21		1	September 10 miles and 10 miles	1 1 1 1 1	•	
			29229 00.09 (1)											
	-	TESSES.		7.77			-			-==		==		

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UNIT: 7th Infantry Division TIME PERIOD: 1 April - 30 June 1945 THEATER: Okinawa DURATION: 91 Days/3 Months

		11	1	<del></del>		ATTACK	
Man-Day Fac Casualties	ctor	1-10 Apr 123. 619	11-15 Apr 59. 475	16-30 Apr 167. 1415	1-5 May 55. 510	6-11 May 48. 324	22-30 M 120. 547
1 Truck, ½ Ton 4x4 C&R	# @	.01626 .3340 (2)		.02994 .3534 (5)	.01818 .1961 (1)		
2 Truck, 2½ Ton (all types)	# @	.00813 .1666 (1)	.03390 .4211 (2)				
3 Tank, Medium	# @	.04064 .8350 (5)		.02994 .3534 (5)		.02083 .3086 (1)	.00833 .1828 (1)
4 Carbine, .30, Ml	# [a		.16949 2.1053 (10)				
5 Rifle, .30, BAR M1918	# @		.05085 .6315 (3)	.01796 .2120 (3)			.02499 .5484 (3)
6 Rifle, .30, Ml	# @		.05085 .6315 (3)				
7 Rifle, .30, M1903 Series	# @						
8 Machine Gun, .30 (all types)	# @	.00813 .1666 (1)	.01695 .2105 (1)	.01198 .1413 (2)			
9 Howitzer, 105 mm	# @	.00813 .1666 (1)			.01818 .1961 (1)		
Howitzer, 155 mm	# @						
Mortar, 81 mm, Ml	# @						
2 Radio Set, SCR-300	# @	.01626 .3340 (2)		.01198 .1413 (2)			
Radio Set, SCR-608	#@			,=/			
Radio Set, SCR-610	# @						[ ]
Generating Unit	# @						
Tank, Light	# @	.03252 .6680 (4)				1	

P	ATTACK					NOT ENGAGED - REST	-	OTHER MOP-UP
7	6-11 May 48. 324	22-30 May 120. 547	31May-10Jun 128. 609	11-20 Jun 109. 855		12-21 May 116. 202		21-30 Jun 109. 352
		1 1 1 1 1		.01834 .2339 (2)		.04310 2.4752 (5)		.02752 .8523 (3)
		 	.00781 .1642 (1)	i i i i	             	.02586 1.4851 (3)		
	.02083 .3086 (1)	.00833 .1828 (1)		.00917 .1170 (1)		.03448 1.9802 (4)		
		 		1				
		.02499 .5484 (3)						
,								
	^							
			-					
	========							12

UNIT: 96th Division
THEATER: Pacific

TIME PERIOD: 1 April - 22 June 1945
DURATION: 83 Days/2.75 Months

ATTACK

					ATI	PACK	
Man-day Fac Casualties	ctor	1-14 Apr 437.57 2100	15-20 Apr 79.53 690	21-30 Apr 130.42 934	11-19 May 132.34 1041	20-30 May 149.17 955	31May-9J 128.30 312
1 Truck, ½ Ton 4x4 C&R	#	.01371 .2857 (6)	.01257 .1449 (1)	.03067 .4283 (4)	.03022 .3842 (4)		.02338 .9615 (3)
2 Truck, 2½ Ton (all types)	# Q	.02057 .4286 (9)					.03895 1.6026 (5)
3 Tank, Medium	# @	.01600 .3333 (7)	.03772 .4348 (3)	.03067 .4283 (4)	.03022 .3842 (4)		
4 Carbine, .30, Ml	# [d	.00457 .0952 (2)	-		.00756 .0961 (1)	 	
5 Rifle, .30, BAR, M1918	# @	.02514 .5238 (11)			.03778 .4803 (5)	.09385 1.4660 (14)	4
6 Rifle, .30, M1	# @				.04534 .5764 (6)	5	
7 Rifle, .30, M1903 Series	# @						
8 Machine Gun, .30 (all types)	# @	.03199 .6667 (14)	.03772 .4348 (3)	.00767 .1071 (1)	.01511 .1921 (2)	.02011 .3141 (3)	! ! !
9 Howitzer, 105 mm	# @	.00457 .0952 (2)					
O Howitzer, 155 mm	# @						
l Mortar, 81 mm, Ml	# [a	.01371 .2857 (6)	.03772 .4348 (3)		.06045 .7685 (8)		
? Radio Set, SCR-300	# @	.04342 .9048 (19)	.01257 .1449 (1)	.01534 .2142 (2)	.01511 .1921 (2)	.040 <b>22</b> .6283	.03118 1.2820 (4)
3 Radio Set, SCR-608	# @	.00229 .0476 (1)					
4 Radio Set, SCR-610	# @	.01828 .3810 (8)	.01257 .1449 (1)	.03067 .4283 (4)		.01341 .2094 (2)	.00779 .3205 (1)
5 Generating Unit, ½ kw	# @				.00756 .0961 (1)		
x Tank, Light	# @	.00229 .0476 (1)	===	===		===	1

0: 1 April - 22 June 1945 83 Days/2.75 Months

		ATT	PACK			NOT ENGAGED - REST
15-20 Apr 79.53 690	21-30 Apr 130.42 934	11-19 May 132.34 1041	20-30 May 149.17 955	31May-9Jun 128.30 312	10-22 Jun 157.75 998	1-10 May 142.455 446
.01257 .1449 (1)	.03067 .4283 (4)	.03022 .3842 (4)		.02338 .9615 (3)	.02536 .4008 (4)	.00702 .2242 (1)
				.03895 1.6026 (5)	.01268 .2004 (2)	.00702 .2242 (1)
.03772 .4348 (3)	.03067 .4283 (4)	.03022 .3842 (4)			.03170 .5010 (5)	
		.00756 .0961 (1)				
		.03778 .4803 (5)	.09385 1.4660 (14)			
		.04534 .5764 (6)				
.03772 .4348 (3)	.00767 .1071 (1)	.01511 .1921 (2)	.02011			
.03772 .4348 (3)		.06045 .7685 (8)				
.01257 .1449 (1)	.01534 .2142 (2)	.01511 .1921 (2)	.040 <b>22</b> .6283 (6)	.03118 1.2820 (4)	.06339 1.0020 (10)	
					.01268 .2004 (2)	
.01257 .1449 (1)	.03067 .4283 (4)		.01341 .2094 (2)	.00779 .3205 (1)	.03170 .5010 (5)	
		.00756 .0961 (1)			.00634 .1002 (1)	
==	=					

UNIT: 25th Infantry Div

TIME PERIOD: 17 September 1950-30 June 1951 DURATION: 9.5 Months

THEATER: KOREA

ITEM Man-Day Fa Casualties		17-30Sep50 206.6 833	7-16Nov50 152.2 97	24-26Nov50 48.0 50	15-23Jan51 140.6 3	25Jan-151 356.1 458
l Truck, ½ Ton 4x4 C&R	· #	.05324 1.3205 (11.)	.60447 94.8454 (92)	.14583 14.0000 (7)	.11380 533.3388 .(16)	.20500 15.9389 (73)
2 Truck, 2½ Ton (all types)	# @	.01452 .3601 (3)	.11826 18.5567 (18)	.68750 66.0000	.06401	.08986 6.9869 (32)
3 Tank, Medium	# @	.01936 .4802 (4)			.01422 66.6673 (2)	.0224 1.7467 (8)
5 Rifle, .30, BAR, M1918	# G	.04840 1.2005 (10)	•			
6 Rifle, .30, M1C (sniper)	#6	Province a management	•	-		
8 Machine Gun, .30 (all types)	:# <u>-</u> @	.03872 .9604 (8)	.02628 4.1237 (4)			
9 Howitzer, 105 mm	₽##					
ll Mortar, 81 mm	#19	.01452 .3601 (3)	.03285 5.1546 (5)			
12 Radio Set, SCR-300	75	.00484 .1200 (1)	.03942 6.1857 (6)	.41667 40.0000 (20)		
13 Radio Set, SCR-608	# a	.01936 .4802 (4)			γ.	
14 Radio Set, SCR-610	# [g	.06776 1.6807 (14)				

<sup>#--</sup>loss per 1000 man-days @--loss per 100 casualties

ATTACK

_		ATTACK						
1	25Jan-15Feb 356.1 458	63.9 160	7Mar-2Apr5. 427.9 762	147.7 169	11-22Apr51 207.2 426	20-31May51 215.0 377	1-30Jun51 346.1 558	10ct-2Nov
	.20500 . 15.9389 (73)	.20344 8.1250 (13)	.03973 2.2310 (17)	.05416 4.7337 (8)	.03861 1.8779 (8)	.09767 5.5701 (21)	.11846 7.3477 (41)	.10403 (60.6742 (54)
	.08986 6.9869 (32)	.25039 10.000 (16)	.02571 1.4436 (11)	.03385 2.9586 (5)	.10618 5.1643 (22)		.04623 2.8674 (16)	.09825 57.3034 (51)
	.02247 1.7467 (8)		.00701 .3937 (3)	.01354 1.1834 (2)	.01930 .9390 (4)	.04186 2.3873 (9)	.03756 2.3297 (13)	.00963 5.6180 (5)
			.01870 1.0499 (8)		.00965 .4695 (2)	.01395 .7957 (3)	.00867 .5376 (3)	
	-							
		.09390 3.7500 (6)				.02326 1.3262 (5)		.00770 4.4944 (4)
				,				.00193 1.1236 (1)

	DE	FI	ΞN	S	Ε
--	----	----	----	---	---

1	10ct-2Nov5	27-28Nov50		11-13Dec50	15-31Dec50	5 Jan51	(9-14Jan51*	* 20Feb-6Mar	1007 - 1
	519.1 89	30.85 838	28.9	45.0 0	261.9	15.5	91.9 6	239.2 27	357.7
	.10403 60.6742 (54)	.45381 1.6706 (14)	.93426 (27)	.08889	.02291 46.1538 (6)		.02176	.03344	.1559 93.93.14 (62)
-	.09825 57.3034 (51)	.12966 .4773 (4)	.79585	1.17778	.01909 38.4615 (5)	1-2-5	.17410 2666667 (16)	.00836 7.4074 (2)	.1005
	.00963 5.6180 (5)		.51903 (15)	.17778	.00382 7.6923 (J.)	==	.01088 16.6667 (1)		.0100
			4.22145						(4)
		COL. Mar.	.93426	.08889	.02673 53.8461 (7)				.0100
		.29173 1.0740 (9)	.76124	.11111	0.0				(4)
			.62284 (18)				-		
	.00770 4.4944 (4)								.05783 34.8485 (23)
-	.00193 1.1236 (1)							.01254 11.1111 (3)	
									.01257 7.5758 (5)

<sup>&</sup>quot; o regiments were in a "not engaged--rest" posture and one regim was conducting a rear-guard action during 9-14 January 51. Divisi losses for both postures are shown by the computations here.

				WITHDRAWAL	IN CONT	ACT		 
an51*	20Feb-6Mar	28Apr-19M <sub>6</sub>	29kov-5Dec 50		14Dec50	1-4Jan51	23-27Apr51	3-6Nov
9	239 <b>.</b> 2 27	397 <b>.7</b>	99 <b>.</b> 5 703	43.8 0	15.1	62.5 56	85.4 466	65.1 52
176 33	.03344 29.6296 (8)	.15590 93.9394 (62)	.82412 11.6643 (82)	.54794		.16000 17.8571 (10)	.16393 3.0043 (14)	.061 7.69 <b>2</b> (4)
<b>4</b> 10 <b>6</b> 7	.00836 7.4074 (2)	.10058 60.6061 (40)	.30151 4.2674 (30)	.50228		.11200 12.5000 (7)	.05855 1.0730 (5)	.015 1.923 (1)
088 <b>6</b> 7		.01006 6.0606 (4)	.03015 .4267 (3)					
The second secon			.16080 2.2760 (16)	*				
The second secon		.01006 6.0606 (4)	1.13568 16.0740 (113)			The second secon	.16393 3.0041 (14)	
		`	.12060 1.7070 (12)					
			•	.04561				
	<del></del>			(2)				To an and the second se
	<u> </u>	.05783 34.8485 (23)	.60301 8.5349 (60)	.50228				
	.01254 11.1111 (3)		.05025 .7112 (5)					
	, , ,	.01257 7.5758 (5)					·	

st" posture and one regimer 9-14 January 51. Division computations here.

NOT ENGAGED NTACT DYSMENT -----1-4Jan51 23-27Apr51 REST 3-6Nov50 17-23Nov50 6-8Jan51 21-30Jan51 24Jan51 62.5 85.4 65.1 112.9 45.1 16. 466 180.4 9 0 0 .16000 .16393 .05314 .06508 .06144 7.6923 .10532 17.8571 3.0043 65.5667 (10) (14) (5) (3) (4) (19).11200 .05855 .02657 .01536 .11641 12.5000 1.0730 1.9231 (7) (5) (3) (1) (21).06508 .04989 (3) (9) .16393 3.0041 (14)

というないでは、これである。 またり まっとう でんかん かんしん はかかん こうかん とうかん

### lst Infantry Division - Spread Sheet/Consolidation 21 March - 8 April 1943 NATOUSA (Gafsa and El Quettar)

		E-L-A-P-S-E-D 19 Days ATTACK	D-A-Y-S
Man-Day Fa Casualties	ctor	302.915	
1 Truck, ½ Ton 4x4 C&R	#	.06603 (20)	
2 Truck, 2½ Ton (all types)	#	.06603	,
3 Tank, Medium			
4 Carbine, .30, Ml	#	.01321	
5 Rifle, .30, BAR, M1918	#	.07593	
6 Rifle, .30, Ml	#	.26741 (81)	
7 Rifle, .30, M1903 Series	#	.13865	
8 Machine Gun, .30 (all types)	#	.09244	
9 Howitzer, 105 mm	#	.02971, (9)	<u> </u>
10 Howitzer, 155 mm	#	.01981	
ll Mortar, 81 mm	#	.03301	
12 Radio Set, SCR-300	#		
13 Radio Set, SCR-608			
14 Radio Set, SCR-610		.00330	
15 Generating Units			

<sup>\*</sup>Due to the absence of daily personnel casualty figures, the losses of equipment per hundred casualties could not be computed.

## WARTIME REPLACEMENT REQUIREMENTS

45th Infantry Division--Consolidation (Transportation and 10 September 1943 - 25 June 1944 Artillery Editaly Artillery Equipment Only

		, E - L - A	- P - S - E -	D D - A -	Y - S	
	<del></del>	11)9 Days ATTACK		140 Days OTHER		ı
Man-Day Factor Casualties	====	1765.2 5905	455.2 2898	2053.5 1384	4273.9 10187	i   
l Truck, ¼ Ton 4x4 C&R	# [a	.04419 1.3209 (78)	.13401 2.1049 (61)	.03068 4.5520 (63)	.04960 2.0811 (212)	 
2 Truck, 2½ Ton (all types)	# @	.01586 .4742 (28)	.00879 .1380 .(4)	.01217 1.8064 (25)	.01334 .5595 (57)	 
3 Tank, Medium*	# @	(8)	(21)		(29)	 
4 Carbine, .30, Ml				EE		1 1 1 1 1
5. Rifle, .30, BAR, M1918			SIGNAL AND O	RDNANCE		
6 Rifle, .30, Ml		, , , , , , , , , , , , , , , , , , ,	CONSOLI			i i i i i
7 Rifle, .30, Ml903 Series			FO 3 FEBRU	l		 
8 Machine Gun, .30 (all types	)	, `	25 JUNE	1944		
9 Howitzer, 105 mm	# @	.00170 .0508 (3)			.00070 .0294 (3)	 
LO Howitzer, 155 mm	# @		,	.00195 .2890 (4)	.00094 .0393 (4)	[     
ll Mortar, 81 mm			SE			;   
.2 Radio Set, SCR-300			SIGNAL AND		1 1 1 1 1 1	
.3 Radio Set, SCR-608			CONSO	LIDATION R	11	
.4 Radio Set, SCR-610			3 FEBR	RUARY -	1	
L5 Generating Unit			25 Jul	E 1944		

<sup>\*</sup>Not computed due to incomplete loss records.

### WARTIME REPLACEMENT REQUIREMENTS

45th Infantry Division--Consolidation (Ordnance and Signal Equipment 3 February - 25 June 1944 Only)
ITALY

			ITALY					
				101 Days	D - A - Y 143 Days TOTAL/OrdEq	127 Days	¦    qip*	
Man-Day Factor Casualties		180. 1892	455.2 2898	1468.3 1317	2103.5 6107	1863.5 4145		
l Truck, ½ Ton 4x4 C&R		 	SEE TRANS	PORTATION A		Y		
2 Truck, 2½ Ton (all types)		i 1 1 1 1		FOR	-		1	Pipers
3 Tank, Medium			10SEPTEME	ER 1943 - 2	5 JUNE 1944	] 	1	-
4 Carbine, .30, Ml	# [a	.16667 1.5856 (30)	.23945 3.7612 (109)	.06334 7.0615 (93)	.11029 3.7989 (232)		1	_
5 Rifle, .30, BAR, M1918	# [a	.06667 .6342 (12)	.22188 3.4852 (101)	.04086 4.5558 (60)	.08244 2.8328 (173)	 	 	
6 Rifle, .30, Ml	#! @	.23333 2.2199 (42)	.68981 10.8351 (314)	.02316 2.5816 (34)	.18540 6.3861 (390)	1 1 1 1 1 1	 	
7 Rifle, .30, M1903 Series	# @	.04444 .4228 (8)	.10984 1. <b>72</b> 53 (50)	.01566 1.7464 (23)	.03851 1.3263 (81)	 	 	
8 Machine Gun, .30 (all types)	# [a	.05000 .4757 (9)	.31634 4.9689 (144)	.00681 .7593 (10)	.07749 2.6691 (163)	 	1 1 1 1	
9 Howitzer, 105 mm		SEE TRANS	PORTATION I	AND ARTILLER FOR	CONSOLIDA	ATION	 	
10 Howitzer, 155 mm			lo septembi	 ER 1943 - 25 	JUNE 1945		1	
ll Mortar, 81 mm	# @		.04174 .6556 (19)	.00204 .2278 (3)	.01188 .4094 (25)		; ! ! ! !	_
12 Radio Set, SCR-300	# @		 	.10216 11.3895 (150)	 	.08049 3.6188 (150)	1	_
13 Radio Set, SCR-608	# @		 	.01430 1.5945 (21)	 	.01127 .5066 (21)		_
14 Radio Set, SCR-610	# @		.04174 .6556 (19)	.03269 3.6446 (48)		.03595 1.6164 (67)	 	
15 Generating Unit	# @		.00879 .1380 (4)	.00136 .1519 (2)		.00322 .1447 (6)	1 1 1 1 1	-

<sup>#-</sup>loss per 1000 man-day
@-loss per 100 casualties

\*The total man-day factor and casualties for signal equipment and generating units were calculated by using the factors and casualties for the period of the reported

### WARTIME REPLACEMENT REQUIREMENTS

45th Infantry Division--Consolidation 15 August - 31 October 1944 FRANCE

			RANCE		v c
	11	38 Days ATTACK		- D D - A - 78 Days   TOTAL	- Y - S
Man-Day Factor Casualties ====================================		551. 2256 ========	600. 141	1151. 2397	
l Truck, 表 Ton 4x4 C&R	#1 @	.05989 1.4628 (33)	.04833 20.5674 (29)	.05387 2.5866 (62)	
2 Truck, 2½ Ton (all types)	#    a	.03993 .9752 (22)	.01000 4.2553 (6)	.02433 1.1681 (28)	
3 Tank, Medium*	# [a]		; ; ; ;		
4 Carbine, .30, Ml	# [a]	.23593 5.7624 (130)	.53000 2255319 (318)	.38923 18.6900 (448)	
5 Rifle, .30, BAR, M1918	#     a	.15063 3.6791 (83)	.07500 31.9149 (45)	.11121 5.3400 (128)	
6 Rifle, .30, Ml	# [a		.07667 32.6241 (46)	.03996 1.9191 (46)	
7 Rifle, .30, M1903 Series	# [a]	.02178 .5319 (12)	.00667 2.8369 (4)	.01390 .6675 (16)	 
8 Machine Gun, .30 (all types)	# [a]	.01633 .3989 (9)	.04833 20.5674 (29)	.03301 1.5853 (38)	
9 Howitzer, 105 mm	# [a	-			
10 Howitzer, 155 mm	# Q	-	  -  -  -  -		
ll Mortar, 81 mm	# @	.00181 .0443 (1)	× .	.00087 .0417 (1)	 
12 Radio Set, SCR-300	# [a		.09167 39.0071 (55)	.04778 2.2945 (55)	1
l3 Radio Set, SCR-608	# @		.07167 30.4964 (43)	.03736 1.7939 (43)	
14 Radio Set, SCR-610	# @		.15500 65.9574 (93)	.08080 3.8798 (93)	
15 Generating Unit	#	,	.00167 .7092 (1)	.00087 .0417 (1)	

<sup>\*</sup>Loss records incomplete

### 6th Armored Division

The 6th Armored Division in Europe was the subject of an officially-sponsored unit history which obviously was compiled with access to the unit's records. Because of the nature of this history, it was not possible to associate personnel casualties and equipment losses directly with describable, discrete periods of combat. A preliminary search did not reveal any primary documentation at the Federal Record Center. If more time were to be made available, a more thorough search could be made. Casualties and losses for the entire combat career of the Division were recorded in the history referred to. From the narrative it is possible to arrive at some reasonably trustworthy figures (expressed as days of combat or activity) under rubrics which resemble those used in other parts of this study.

Defense	109
Reserve and Rest	15
Attack - light	10
Attack - mixed	131
Attack - heavy	12

These figures must be viewed with caution, since they are derived from a history which was prepared for the edification of the troops, but they seem to represent with some accuracy the combat experience of one armored division in Europe. It is interesting to note that the unit's time spent in various attack postures is only slightly greater than that spent in all other postures—153 days for attack, 124 days for defense, reserve, and rest. If this study develops mathematical ratios among the several combat postures, they will be used to distribute the losses of the 6th Armored Division within the standard matrix of the study. It is emphasized, however, that the groupings are very general in nature. The "Attack-mixed" category, for example, includes alternating periods of light and heavy activity, pursuit, and counterattack.

The spread sheet developed for this unit does not subdivide into time periods. The losses, casualties, and man-days are calculated to cover the entire period of the division's WWII activity. Since periodic strength reports were not available, the strength of an armored division as given in the T/O of January 1945 is used. This will tend to decrease the "1000 man-day factor" if, as was likely, strength averaged less than T/O.

UNIT: 6th Armored Division

(T/O strength - 10670)

TIME PERIOD: 28 July 1944 -

30 April 1945

THEATER: EUROPE

DURATION:

277 Days

F-		
	ay Factor Ities	2856 <b>.</b> 5704
l Truck, ½ Ton 4x4 C&R	# @	.08158 4.0848 <u>/61</u> 7 (233)
2 Truck, 2½ Ton (all types)	# @	.03081 1.5428 <u>/26</u> 7 (88)
3 Tank, Medium	# @	.05637 2.8226 <u>/93</u> / (161)
x Tank, Light	# @	.01891 .9467 <u>/</u> 1 <u>3</u> 7 (54)
Aircraft, Liaison, L-4	# @	.00280 .1402 / <u>1</u> / (8)

NOTE: The above losses were shown as aggregates, with no separation as to cause or repairability. Later tables make these differentiations, but the numbers do not balance. The table entitled "Non-Battle Vehicular Casualties" does include the entry "Worn Out through Fair Wear and Tear"; these figures are shown in brackets above. It is not clear, however, whether these figures are included in, or are in addition to, the other figures. For purposes of this study, it is assumed that the former case is true and that the general condition of use in combat, rather than direct enemy action, produced the loss.

#--loss per 1000 man-days
@--loss per 100 casualties

#### 28th Infantry Division--Consolidation 1 August - 27 December 1944 ETO

		•	ETO			
		E - L 61 Days ATTACK	- A - P - S 50 Days ! DEFENSE !		22 Days	151 Days TOTAL
Man-Day Factor Casualties ====================================		863. 6891	552. 785	217. 5207	361. 118	1993. 12301
l Truck, ½ Ton 4x4 C&R	# @	.06373 .7981 (55)	.02898 2.0382 (16)	.90323 3.7642 (196)	.03047 9.3220 (11)	.13949 2.2600 (278)
2 Truck, 2½ Ton (all types)	# @	.00927 .1161 (8)	.00543 .3822 (3)	.28111 1.1715 (61)		.03613 .5853 (72)
3 Tank, Medium	# I	.01043 .1306 (9)	     	.07834 .3265 (17)		.01305 .2114 (26)
4 Carbine, .30, Ml	# @ !	.22711 2.8443 (196)	.04348 3.0573 (24)	.00461 .0192 (1)	.09695 29.6610 (35)	.12845 2.0811 (256)
5 Rifle, .30, BAR M1918	# @	.19351 2.4234 (167)	.07971 5.6051 (44)	.83410 3.4761 (181)	.28255 86.4407 (102)	.24787 4.0159 (494)
6 Rifle, .30, Ml	# [a		! ! ! !			
7 Rifle, .30, M1903 Series (snipers only)	# @	.00232 .0290 (2)	.03442 2.4204 (19)		.05263 16.1017 (19)	.02007 .3252 (40)
8 Machine Gun, .30 (all types)	# [a	.08459 1.0600 (73)	.05254 3.6943 (29)	.50691 2.1125 (110)	.01939 5.9322 (7)	.10988 1.7803 (219)
9 Howitzer, 105 mm	# [a			.05530 .2305 (12)	 	.00602 .0976 (12)
O Howitzer, 155 mm	#    [a				.00277 .8475 (1)	.00050 .0081 (1)
l Mortar, 81 mm	# [a	.01159 .1451 (10)	.02174 1.5287 (12)	.11060 .4609 (24)	.00821 2.5424 (3)	.02459 .3983 (49)
2 Radio Set, SCR-300	#	.07532 .9433 (65)			.00831 2.5424 (3)	.03412 .5528 (68)
3 Radio Set, SCR-608	# [] []				.00554 1.6949 (2)	.00100 .0163 .(2)
4 Radio Set, SCR-610	# []	.02086 .2612 (18)			.00270 .8475 (1)	.00953 .1545 (19)
5 Generating Units	#    @		*			

--loss per 1000 man-days

#### 7th Infantry Division - Consolidation 1 April - 30 June 1945 OKINAWA

			INAWA		
		71 Days ATTACK	A - P - S - E 10 Days REST	- D D - A - 10 Days MOP-UP	Y - S 91 Days TOTAL
Man-Day Factor Casualties		809. 5354	116. 202	109. 352	1034 5908
l Truck, 沒 Ton 4x4 C&R	# @	.01236 .1868 (10)	.04310 2.4752 (5)	.02752 .8523 (3)	.01741 .3047 (18)
2 Truck, 2½ Ton (all types)	# @	.00494	.02586 1.4851 (3)		.00677 .1185 (7)
3 Tank, Medium	# @	.01607 .2428 (13)	.03448 1.9802 (4)		.01644 .2877 (17)
4 Carbine, .30, Ml	# [a	.01236 .1868 (10)			.00967 .1693 (10)
5 Rifle, .30, BAR, M1918	# [a	.01112 .1681 (9)			.00870 .1523 (9)
6 Rifle, .30, Ml	# @	.00371 .0560 (3)		7	.00290 .0508 (3)
7 Rifle, .30, Ml903 Series	# [a				
Machine Gun, .30 (all types)	) # [a	.00494 .0747 (4)			.00387 .0677 (4)
Howitzer, 105 mm	# @	.00247 .0373 (2)			.00193
Howitzer, 155 mm	# [a				(2)
Mortar, 81 mm	# @				
Radio Set, SCR-300	# [a	.00494 .0747 (4)			.00387
Radio Set, SCR-608	# @			· ** · · · · · · · · · · · · · · · · ·	· ( † )
Radio Set, SCR-610	# @	-			1 1 1 1 1
Generating Units	# [a	,			   E     
======================================	# . @	.00494 .0747			.00387

#### 96th Infantry Division - Consolidation 1 April - 22 June 1945 OKINAWA

		E-L-A-P-S-E-D D-A-Y-S				
	***************************************		73 Days ATTACK	lO Days OTHER	83 Days TOTAL	
	Man-Day Factor Casualties		1215. 7030	142.4 446	1357.4 7476	
1	Truck, ½ Ton 4x4 C&R	# @	.01811 .3129 (22)	.00702 .2242 (1)	.01694 .3076 (23)	
2	Truck, 2½ Ton (all types)	# @	.01317 .2276 (16)	.00702 .2242 (1)	.01252 .2274 (17)	
3	Tank, Medium	# [a	.01893 .3272 (23)	     	.01694 .3076 (23)	
4	Carbine, .30, Ml	# @		 		
5	Rifle, .30, BAR, M1918	#	.02469 .4267 (30)		.02210 .4013 (30)	
6	Rifle, .30, Ml	# @		 	1 1 1 1 1 1 1	
7	Rifle, .30, M1903 Series	# [a		 		
8	Machine Gun, .30 (all types)	# @	.01893 .3272 (23)		.01694 .3076 (23)	
9	Howitzer, 105 mm	# [a	.00165 .0284 (2)	   	.00147 .0267 (2)	
0	Howitzer, 155 mm	# @			 	
1	Mortar, 81 mm	#@	.01399 .2418 (17	 	.01252 .2274 (17)	
2	Radio Set, SCR-300	# a	.03621 .6259 (44)		.03241 .5885 (44)	
3	Radio Set, SCR-608	# @	.00247 .0427 (3)		.00221 .0401 (3)	
4	Radio Set, SCR-610	# @	.01728 .2987 (21)		.01547 .2809 (21)	
5	Generating Units	# [a				

<sup>#--</sup>loss per 1000 man-days Q--loss per 100 casualties

2nd Infantry Division -- Consolidation/Spread Sheet 26-30 November 1950 KOREA

E - L - A - P - S - E - D D - A - Y - S

	 	5 Days DEFENSEWITHDRAWAL IN CONTACT
Man-Day Factor Casualties		65.3 5441
l Truck, ½ Ton 4x4 C&R	# [a	5.20674 6.2488 (340)
2 Truck, 2½ Ton (all types)	# @	3.49158 4.1904 (228)
3 Tank, Medium	# @	.90352 1.0844 (59)
4 Carbine, .30, Ml	# @	
5 Rifle, .30, BAR, M1918	# @	3.46095 4.1536 (226)
6 Rifle, .30, Ml	# . \ @	50.64318 60.7793 (3307)
7 Rifle, .30, M1903 Series	# @	
8 Machine Gun, .30 (all types)	# _@	.53599 .6433 (35)
9 Howitzer, 105 mm	# @	.75038 .9006 (49)
10 Howitzer, 155 mm.	# @	.16845 .2022 (11)
ll Mortar, 81 mm	# @	.24502 .2941 (16)
12 Radio Set, SCR-300	# @	2.95559 3.5471 (193)
13 Radio Set, SCR-608	# @	
14 Radio Set, SCR-610	#	

10 Howitzer, 155 mm	# @	.16845 .2022 (11)		
ll Mortar, 81 mm	# [a	.24502 .2941 (16)		
12 Radio Set, SCR-300	# @	2.955 <b>5</b> 9 3.5471 (193)		
13 Radio Set, SCR-608	#    @			
14 Radio Set, SCR-610	# [] []			
15 Generating Units	# @			
APC M-39	# @	.19908 .2389 (13)		
SCR-506	# @	.09188 .1103 (6)		
SCR-510	# @	.13782 .1654 (9)		
SCR-536	# @	5.0689 6.0834 (331)	,	

#--loss per 1000 man-days Q--loss per 100 casualties

25th Infantry Division - Consolidation 17 September 1950 - 30 June 1951 KOREA

E - L - A - P - S - E - D D - A - Y - S

		151 Days ATTACK	102 Days DEFENSE	20 Days WITHDRAWAL	25 Days MOVEMENT NOT EN	REST	308 Days
Man-Day Factor Casualties		2311.3 3893	1630.05 1053	306.3 1226	240.1 61	180.4	4668.15 6233
ruck, ½ Ton 4x4 C&R	# @	.13283 7.8859 (307)	.10859 16.8091 (177)	.42442 10.6036 (130)	.13328 5 <b>2.</b> 4590 (32)	.10532  (19)	.14245 10.6690 (665)
ruck, 2½ Ton (all types)	# @	.07139 4.2384 (165)	.11901 18.4236 (194)	.20894 5.2202 (64)	.10412 40.9836 (25)	.11641	.10047 7.5245 (469)
ank, Medium	# @	.01947 1.1559 (45)	.02086 3.2289 (34)	.00979 .2447 (3)	.04998 19.6721 (12)	.04989	.02206 1.6525 (103)
arbine, .30, Ml	# @						(200)
ifle, .30, BAR, M1918	# [d	.00433 .2569 (10)	.07484 11.5859 (122)	.05224 1.3051 (16)			.03170 2.3745 (148)
ifle, .30, MlC (Sniper)	# @	.00692 .4110 (16)	.02577 3.9886 (42)	.41463 10.3589 (127)			.03963 2.9681 (185)
ifle, .30, M1903 Series	# @						
achine Gun, .30 (all types)	# [a	.00519 .3082 (12)	.02209 3.4188 (36)	.03918 .9788 (12)			.01285 .9626 (60)
owitzer, 105 mm	# @			.00653 .1631 (2)			.00043 .0321 (2)
Owitzer, 155 mm	# @						
ortar, 81 mm	#  d	.00346 .2055 (8)	.01104 1.709# (18)			٧	.00557 .4171 (26)
2 adio Set, SCR-300	# @	.01644 .9761 (38)	.01656 2.5641 (27)	.26771 6.6884 (82)		===	2
adio Set, SCR-608	# @	.00173 .1027 (4)	.00245 .3799 (4)	.01632 .4078 (5)			.00278 .2086 (13)

	-	(165)	(194)	(64)	(25)	(21)	(469)
	# @		.02086 3.2289 (34)	.00979	.04998 19.6721 (12)	.04989	.02206 1.6525 (103)
Carbine, .30, Ml	# @						1
	# [a	.00433 .2569 (10)	.07484 11.5859 (122)	.05224 1.3051 (16)			.03170 2.3745 (148)
6 Rifle, .30, MlC (Sniper)	# @	.00692 .4110 (16)	.02577 3.9886 (42)	.41463 10.3589 (127)			.03963 2.9681 (185)
	# @				 	 	
	# [a	.00519 .3082 (12)	.02209 3.4188 (36)	.03918 .9788 (12)			.01285 .9626 (60)
· · · · · · · · · · · · · · · · · · ·	# @		 	.00653 .1631 (2)	1 } 1 1 ! !	 	.00043 .0321 (2)
	# @			 	 		! ! ! !
	# [d	.00346 .2055 (8)	.01104 1.7094 (18)	 	 	 	.00557 .4171 (26)
The state of the s	# @	.01644 .9761 (38)	.01656 2.5641 (27)	.26771 6.6884 (82)	   	   	.03149 2.3584 (147)
	# @	.00173 .1027 (4)	.00245 .3799 (4)	.01632 .4078 (5)			.00278 .2086 (13)
	# @	.00606 .3596 (14)	.00307 .4748 (5)	         	 	     	.00407 .3048 (19)
15 Generating Units	# @				1	1	

<sup>#--</sup>loss per 1000 man-days @--loss per 100 casualties

UNIT: 77th Infantry Division

TIME PERIOD: 11 Aug - 11 Nov 1918

THEATRE: VESLE/ARGONNE

DURATION: 93 Days

ITEM		11Aug - 25Sept 1918	26Sept - 11Nov 1918* # 822.55 @ 4235
Chauchat (BAR)	# @	.13415 2.5850 (108)	.63096 12.2550 (519)
Rifle, 1917	#. @	.20123 3.8775 (162)	.54951 10.6730 (452)
Rifle w/telesght	# @		.00729 .1417 (6)
Rifle, Springfield w/telesght	# @		.00365 .0708 (3)
Rifle, Gernade Launcher	# @	.02360 .4548 (19)	.62732 12.1842 (516)
Machine Gun, Hotchkiss	# @	.01615 .3112 (13)	.04863 .9445 (40)
Gun, 75 mm	# @	.04969 .9574 (40)	.01945 .3778 (16)
Howitzer, 155 mm	# [d	.01615 .3112 (13)	.00243 .0472 (2)

<sup>\*</sup>Equipment losses were recorded from combat records for September 26-30 and October 20-29; records for October 1-19 and October 30 - November 11 were not available. The Division was in Corps Reserve from October 16-30; because losses recorded in the October 20-29 report were of such large quantity it is probable that the majority of the losses occurred during the October 1-15 battle period. Casualty figures were reported for the entire September 26 - November 11 period.

<sup>#--</sup>loss per 1000 man-days
@--loss per 100 casualties

UNIT: FIRST ARMY THEATRE: ETO

TIME PERIOD: 1 August 1944 - 22 February 1945
DURATION: 195 Days - Attack / 11 Days - Withdrawal

THEATRE: ETO DURATION  Spread Sheet/Consolidation	ATTACK	WITHDRAWAL	
Man-Day Factor ITEM Casualties		Feb 16 - 26 Dec	TOTAL 60080.930 118319
1 Truck, 4 Ton 4x4 C&R	# .05211	.21613	.06215
	@ 3.0026	3.8898	3.1559
	(2939)	(795)	(3734)
2 Truck, 2½ Ton (all types)	# .01580	.17562	.02558
	@ .9103	3.1608	1.2990
	(891)	(646)	(1537)
3 Tank, Medium	# .01468	.07558	.01841
	@ .8459	1.3602	.9348
	(828)	(278)	(1106)
4 Carbine, .30, Ml	# .11492	1.10157	.17533
	@ 6.6223	19.8258	8.9031
	(6482)	(4052)	(10534)
5 Rifle, .30, BAR, M1918	# .04665	.18214	.05494
	@ 2.6880	3.2782	2.7ɛ99
	(2631)	(670)	(3301)
6 Rifle, .30, Ml	# .22861	1.21276	.28886
	@ 13.1731	21.8270	14.6680
	(12894)	(4461)	(17355)
7 Rifle, .30, M1903 Series (less Snprs)	# .00165	.00598	.00191
	@ .0950	.1076	.0972
	(93)	(22)	(115)
8 Machine Gun, .30 (all types)	# .03704	.26968	.05128
	@ 2.1342	4.8537	2.6040
	(2089)	(992)	(3081)
9 Howitzer, 105 mm	# .00082	.01821	.00188
	.0470	.3278	.0955
	(46)	(67)	(113)
10 Howitzer, 155 mm	# .00023	.00272	.00038
	.0133	.0489	.0194
	(13)	(10)	(23)
ll Mortar, 81 mm	# .00408	.03860	.00636
	@ .2350	.6948	.3229
	(230)	(142)	(382)
12 Radio Set, SCR-300	# @		
13 Radio Set, SCR-608	#	1	
14 Radio Set, SCR-610	# [G		The mast of makes, to page over contains on the stage and the stage of
15 Generating Unit, M5	# .00023	.00843	.00073
	@ .0133	.1517	.0372
	(13)	(31)	(44)
7a Rifle, .30, M1903A4 (Snpr)	# .00631	.02420	.00741

with the same	THY, MESTIG	#	.04665	.18214	.05494
		<u>[</u> a		3.2782 (670)	2.7899 (3301)
6	Rifle, .30, Ml	# @		1.21276 21.8270 (4461)	.28886 14.6680 (17355)
7	Rifle, .30, M1903 Series (less Snprs)	# [a	.00165 .0950 (93)	.00598 .1076 (22)	.00191 .0972 (115)
8	Machine Gun, .30 (all types)	# [a	.03704 2.1342 (2089)	.26968 4.8537 (992)	.05128 2.6040 (3081)
9	Howitzer, 105 mm	# [a	.00082 ,0470 (46)	.01821 .3278 (67)	.00188 .0955 (113)
10	Howitzer, 155 mm	# @	.00023 .0133 (13)	.00272 .0489 (10)	.00038 .0194 (23)
11	Mortar, 81 mm	# [a	.00408 .2350 (230)	.03860 .6948 (142)	.00636 .3229 (382)
12	Radio Set, SCR-300	# [a			
13	Radio Set, SCR-608	#			
14	Radio Set, SCR-610	# [a]			
-	Generating Unit, M5	#@	.00023 .0133 (13)	.00843 .1517 (31)	.00073 .0372 (44)
_	Rifle, .30, M1903A4 (Snpr)	# [a]	.00631 .3637 - (356)	.02420 .4355 (89)	.00741 .3761 (445)
:xx	Gun, 155 mm	# [a]	.00007 .0041 (4)	.00054 .0098 (2)	.00010 .0051 (6)

See attached NOTE.

<sup>#</sup> loss per 1000 man-days
@ loss per 100 casualties

NOTE: Because First Army losses were consolidated for the entire 1 August 1944 - 22 February 1945 period, the loss per 1000 man/days and per 100 casualties according to combat postures was computed by extrapolation of figures from First United States Army, Report of Operations, Annex #9: Ordnance Section, using the period 16 December through 26 December as one of withdrawal in contact, and the remaining six and one-half months as a general attack posture. (See

attached computations.)

In the First United States Army, Report of Operations, Vol. I, p. 128, it is reported that the losses resulting from the German counter-offensive (16 December 1944 - 2 January 1945) included "1,284 machine guns of various types and caliber, 542 mortars, 1344 trucks ½ ton, 4x4 and 237 tanks. Not all of these losses were the result of being overrun as there was some evidence of unnecessary discarding or abandoning of equipment particularly among inexperienced troops." These figures are not fully consistent with those computed by the method described above; they include, however, loss for a seven day period in a general counteroffensive posture. Thus, on an order of magnitude basis, the computation method is generally confirmed.

Fifth Army--Consolidation 9 September 1943 - 16 September 1944 ITALY

E-L-A-P-S-E-D D-A-Y-S

	329 Da ATTA		373 Days TOTAL	
Man-Day Factor Casualties	57,437 73,008		67,107. 78,371	
Truck, ½ Ton 4x4 C&R	# .0317 @ 2.4942 (1821	3.0207	.02955 2.5303 (1983)	
Truck, 2½ Ton (all types)	# .0306 @ 2.4106 (1760	2.7783	.02845 2.4%3a (1909)	
Tank, Medium	# .00979 @ .7670 (560)		.00876 .7503 (588)	
Carbine, .30, Ml	# .07745 g 6.0911 (4447	8.8197	.07332 6.2778 (4920)	
Rifle, .30, BAR, M1918	# .03303 @ 2.5983 (1897	2.6291	.030 <b>3</b> 7 2.6004 (2038)	
Rifle, .30, M1*	# .13579 @ 10.6797 (7797	4.9972	.12018 10.2908 (8065)	
Rifle, .30, M1903 Series* (less Snipers)	# .07659 @ 6.0254 (4399)	1.7527	.06695 5.7330 (4493)	
Machine Gun, .30 (all types)	# .02770 @ 2.1792 (1591	2.1443	.02542 2.1768 (1706)	
	# .0008! @ .0671 (49)	5	.00073 .0625 (49)	
Howitzer, 155 mm	# .00050 @ .0397 (29)	.00362 .6526 (35)	.00095 .0817 (64)	
Mortar, 81 mm	# .00474 @ .3726 (272)	.2983	.00429 .3675 (288)	1
Radio Sot, SCR-300	#			1
	#			
	#			
Generating Units M5	#0003	00021	00034	

	sarbine, .Jo, ni	<b>a   </b>	6.0911 (4447)	8.8197 (473)	<b>6.2778</b> (4920)	
5 1	Rifle, .30, BAR, M1918	#	.03303 2.5983 (1897)	.01458 2.6291 (141)	.030 <b>3</b> 7 2.6004 (2038)	
6	Rifle, .30, Ml*	#   -	.13575 10.6797 (7797)	.02771 4.9972 (268)	.12018 10.2908 (8065)	
7	Rifle, .30, M1903 Series* (less Snipers)	# @	.07659 6.0254 (4399)	.00972 1.7527 (94)	.06695 5.7330 (4493)	
8	Machine Gun, .30 (all types)	#	.02770 2.1792 (1591)	.01189 2.1443 (115)	.02542 2.1768 (1706)	
9	Howitzer, 105 mm	# @	.00085 .0671 (49)	     	.00073 .0625 (49)	
10	Howitzer, 155 mm	# @	.00050 .0397 (29)	.00362 .6526 (35)	.00095 .0817 (64)	
11	Mortar, 81 mm	# @	.00474 .3726 (272)	.00165 .2983 (16)	.00429 .3675 (288)	
12	Radio Set, SCR-300	#@				
13	Radio Set, SCR-608	#   a				
14	Radio Set, SCR-610	# @				
15	Generating Units, M5	# @	.00037 .0288 (21)	.00021 .0373 (2)	.00034 .0293 (23)	
9	· Consolidated Rifles	# @	.21234 16.7050 (12,196)	.03743 6.7499 (362)	.18713 16.0238 (12,558)	
and their	Tank, Light	# @	.004ll .3233 (236)	.00031 .0559 (3)	.00356 .3050 (239)	

Seventh Army - Consolidation 5 November 1944 - 12 May 1945

:	5 November 1944 - 12 May 1945									
		ETO E-L-A-P-S-E-D D-A-Y-S								
		147 Days ATTACK		14 Days WITHDRAWAL		189 Days TOTAL				
Man-Day Factor Casualties	=====	40277. 51418	34 <b>4</b> 1. 4140	3086. 8248	4138. 2504	50942. 66310				
l Truck, ½ Ton 4x4 C&R	# @	.03394 2.6586 (1367)	.00959 .7971 (33)	.05736 2.1460 (177)	.04205 6.9489 (174)	.03437 2.6406 (1751)				
2 Truck, 2½ Ton (all types)	# @	.02910 2.2794 (1172)	.00232 .1932 (8)	.01458 .5456 (45)	.10585 17.4920 (438)	.03264 2.5079 (1663)				
3 Tank, Medium	# @	.01187 .9296 (478)	.00291 .2415 (10)	.02009 .7517 (62)	.00773 1.2780 (32)	.01142 .8777 (582)				
4 Carbine, .30, Ml	# @	.23388 18.3204 (9420)	.22232 18.4783 (765)	.20188 7.5533 (623)	.10657 17.6118 (441)	.22082 16.9643 (11249)				
5 Rifle, .30, BAR, M1918	# @	.03503 2.7442 (1411)	.01831 1.5217 (63)	.04569 1.7095 (141)	.03407 5.6310 (141)	.03447 2.6482 (1756)				
6 Rifle, .30, Ml	# @	.45852 35.9174 (18468)	.07062 5.8696 (243)	.05703 2.1338 (176)	.05703 9.4249 (236)	.37539 28.8388 (19123)				
7 Rifle, .30, M1903 Series (includes Snipers)	# @	.01490 1.1669 (600)	.01656 1.3768 (57)	.02203 .8244 (68)	.00072 .1198 (3)	.01429 1.0979 (728)				
8 Machine Gun, .30 (all type	s) # @	.02532 1.9837 (1020)	.02557 2.1256 (88)	.07388 2.7643 (228)	.02392 3.9537 (99)	.02817 2.1641 (1435)				
9 Howitzer, 105 mm	# @	.00017 .0136 (7)		.00032 .0121 (1)		.00016 .0121 (8)				
10 Howitzer, 155 mm	# @	.00032 .0253 (13)		   	.00048 .0799 (2)	.00029 .0226 (15)				
ll Mortar, 81 mm	# @	.00353 .2762 (142)	.00116 .0966 (4)	.01004 .3758 (31)	.00459 .7588 (19)	.00385 .2956 (196)				
12 Radio Set, SCR-300	# @	.01383 1.0833 (557)	.00726 .6039 (25)	.01620 .6062 (50)	.02199 3.6342 (91)	.01419 1.0903 (723)				
13 Radio Set, SCR-608	# @	.00012 .0097 (5)	.00029 .0242 (1)	.00065 .0242 (2)	.00097 .1597 (4)					
14 Radio Set, SCR-610	# @	.00283 .2217 (114)	.00087 .0725 (3)	.01004 .3758 (31)	.00387 .6390 (16)	.00522 .2473 (164)				
15 Generating Unit, M5	# @	.00037 .0292 (15)		.00097 .0364 (3)		.00035 .0271 (18)				
					i					

	a I	.9296 (478)	(10)	(62)	(32)	(582)
rbine, .30, Ml	# @	.23388 18.3204 (9420)	.22232 18.4783 (765)	.20188 7.5533 (623)	.10657 17.6118 (441)	.22082 16.9643 (11249)
fle, .30, BAR, M1918	# @	.03503 2.7442 (1411)	.01831 1.5217 (63)	.04569 1.7095 (141)	.03407 5.6310 (141)	.03447 2.6482 (1756)
ifle, .30, Ml	# @	.45852 35.9174 (18468)	.07062 5.8696 (243)	.05703 2.1338 (176)	.05703 9.4249 (236)	.37539 28.8388 (19123)
ifle, .30, M1903 Series (includes Snipers)	# [a	.01490 1.1669 (600)	.01656 1.3768 (57)	.02203 .8244 (68)	.00072 .1198 (3)	.01429 1.0979 (728)
achine Gun, .30 (all types)	) # @	.02532 1.9837 (1020)	.02557 2.1256 (88)	.07388 2.7643 (228)	.02392 3.9537 (99)	.02817 2.1641 (1435)
owitzer, 105 mm	# @	.00017 .0136 (7)		.00032 .0121 (1)		.00016 .0121 (8)
owitzer, 155 mm	# @	.00032 .0253 (13)	     		.00048 .0799 (2)	.00029 .0226 (15)
ortar, 81 mm	# @	.00353 .2762 (142)	.00116 .0966 (4)	.01004 .3758 (31)	.00459 .7588 (19)	.00385 .2956 (196)
adio Set, SCR-300	#@	.01383 1.0833 (557)	.00726 .6039 (25)	.01620 .6062 (50)	.02199 3.6342 (91)	.01419 1.0903 (723)
Radio Set, SCR-608	# @	.00012 .0097 (5)	.00029 .0242 (1)	.00065 .0242 (2)	.00097 .1597 (4)	.00024 .0181 (12)
<b>R</b> adio Set, SCR-610	# [a	.00283 .2217 (114)	.00087 .0725 (3)	.01004 .3758 (31)	.00387 .6390 (16)	.00322 .2473 (164)
Generating Unit, M5	# @	.00037 .0292 (15)		.00097 .0364 (3)		.00035 .0271 (18)
Tank, Light	# @	.00362 .2839 (146)	.00262 .2174 (9)	.00486 .1819 (15)	.00193 .3195 (8)	.00349 .2684 (178)

loss per 1000 man-days loss per 100 casualties

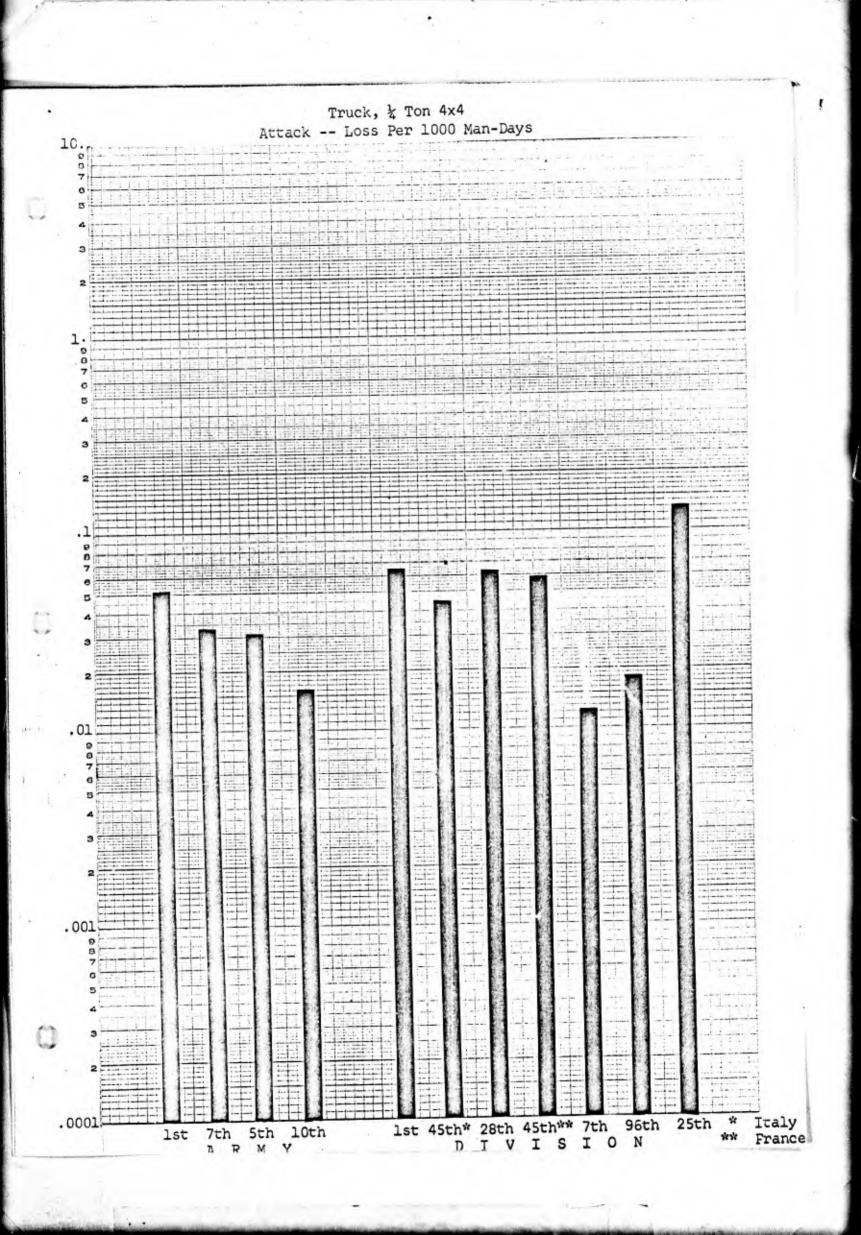
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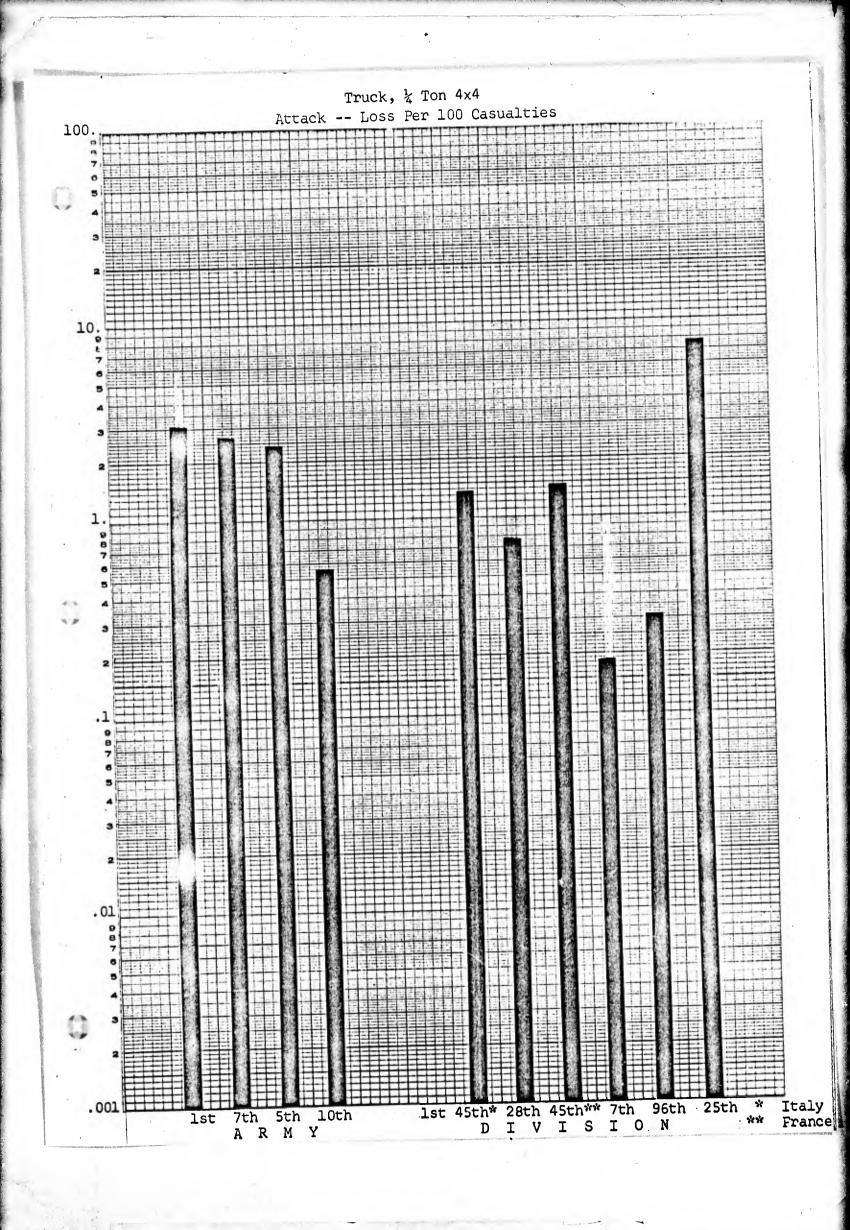
#### Tenth Army--Spread Sheet/Consolidation 1 April - 30 June 1945

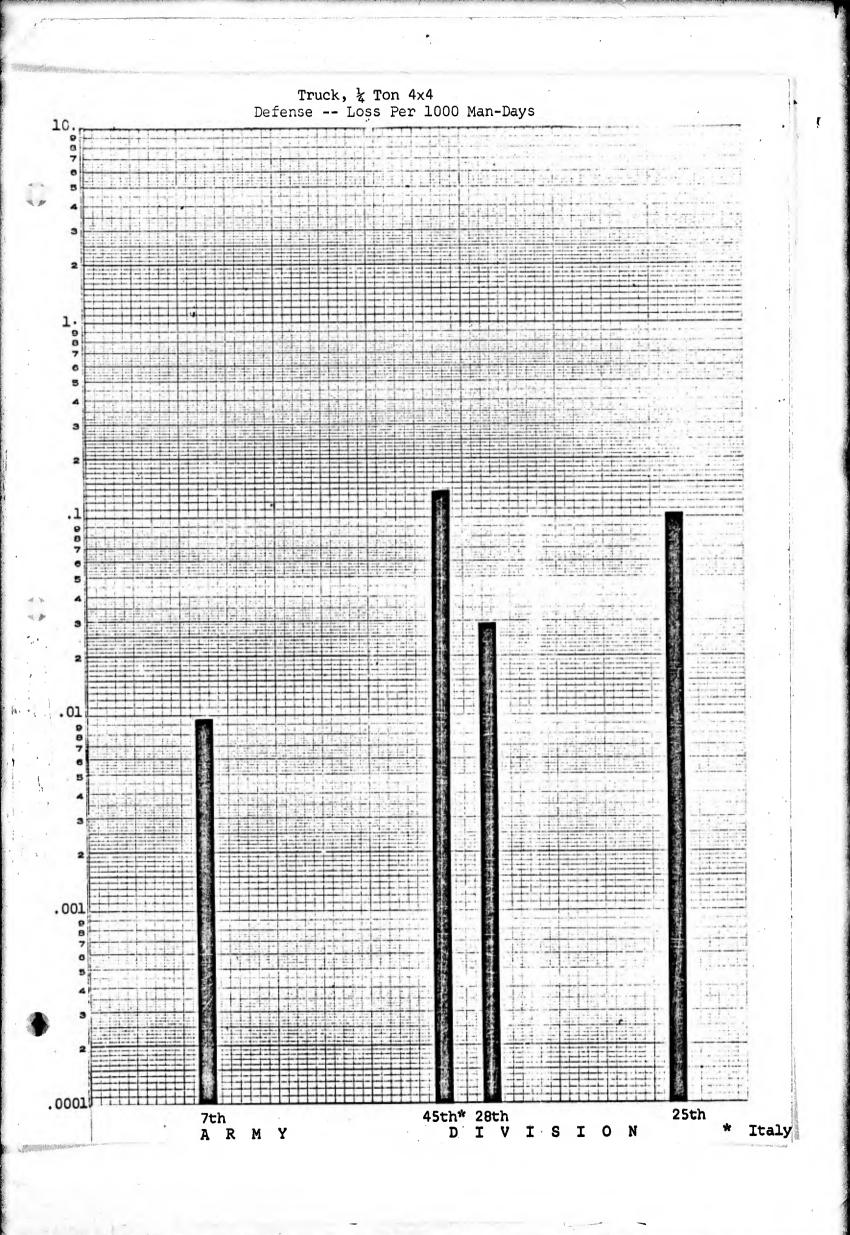
#### Okinawa

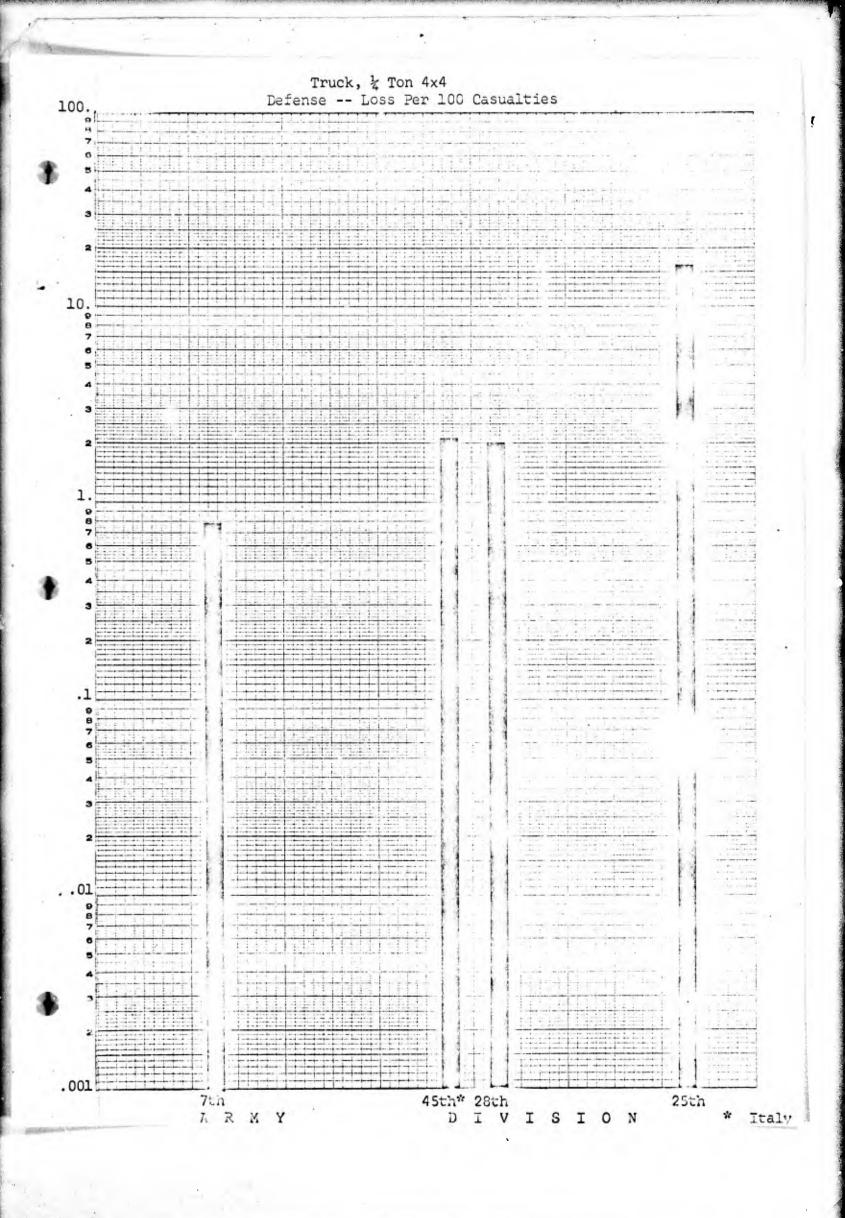
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-----	-----	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

X	Tank, Light	#	.00029 #loss per 1000 man-days
15	Generating Unit, M5	# @	.00021 .0076 (3)
14	Radio Set, SCR-610	# @	
13	Radio Set, SCR-608	# @	
12	Radio Set, SCR-300 .	# @	
11	Mortar, 81 mm, Ml	# @	.00350 .1243 (49)
10	Howitzer, 155 mm	# @	.00014 .0051 (2)
9	Howitzer, 105 mm	# @	.00079 .0279 (11)
8	Machine Gun, .30 (all types)	# @	.01309 .4642 (183)
7	Rifle, .30, M1903 Series	# @	.00322 .1142 (45)
6	Rifle, .30, Ml	# @	.11263 3.9954 (1,575)
5	Rifle, .30, BAR, M1918	# [a	.09489 3.3663 (1,327)
4	Carbine, .30, Ml	# [a	.12765 4.5282 (1,785)
3	Tank, Medium	# @	.01051 .3729 (147)
2	Truck, 2½ Ton (all types)	# [a	.01008 .3577 (141)
1	Truck, ½ Ton 4x4 C&R	# @	.01602 .5682 (224)
	Man-Day Factor Casualties		13,983.631 39,420
			E-L-A-P-S-E-D D-A-Y-S    91 Days   ATTACK

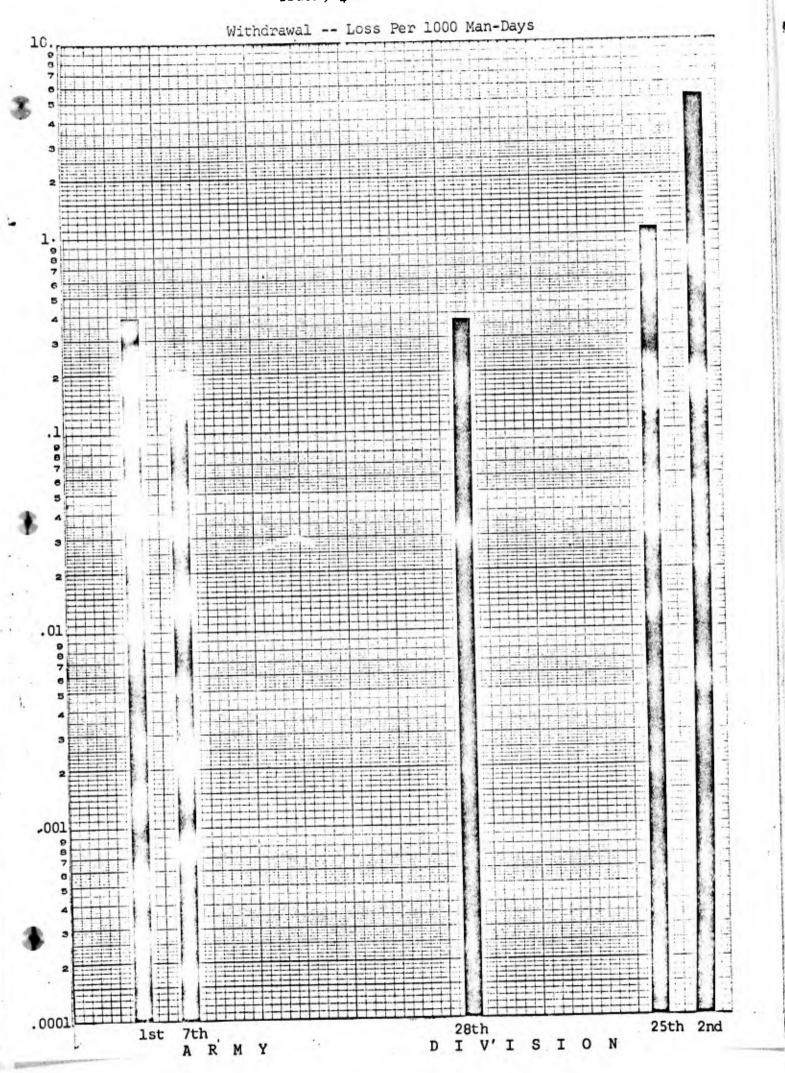




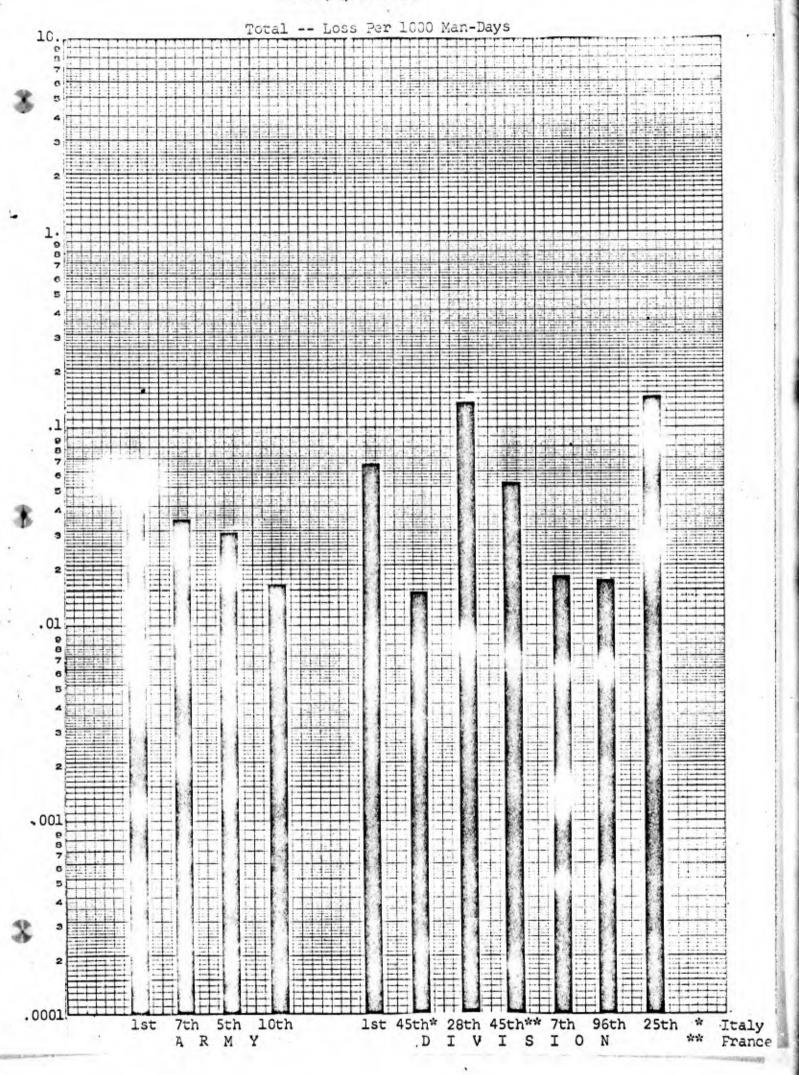


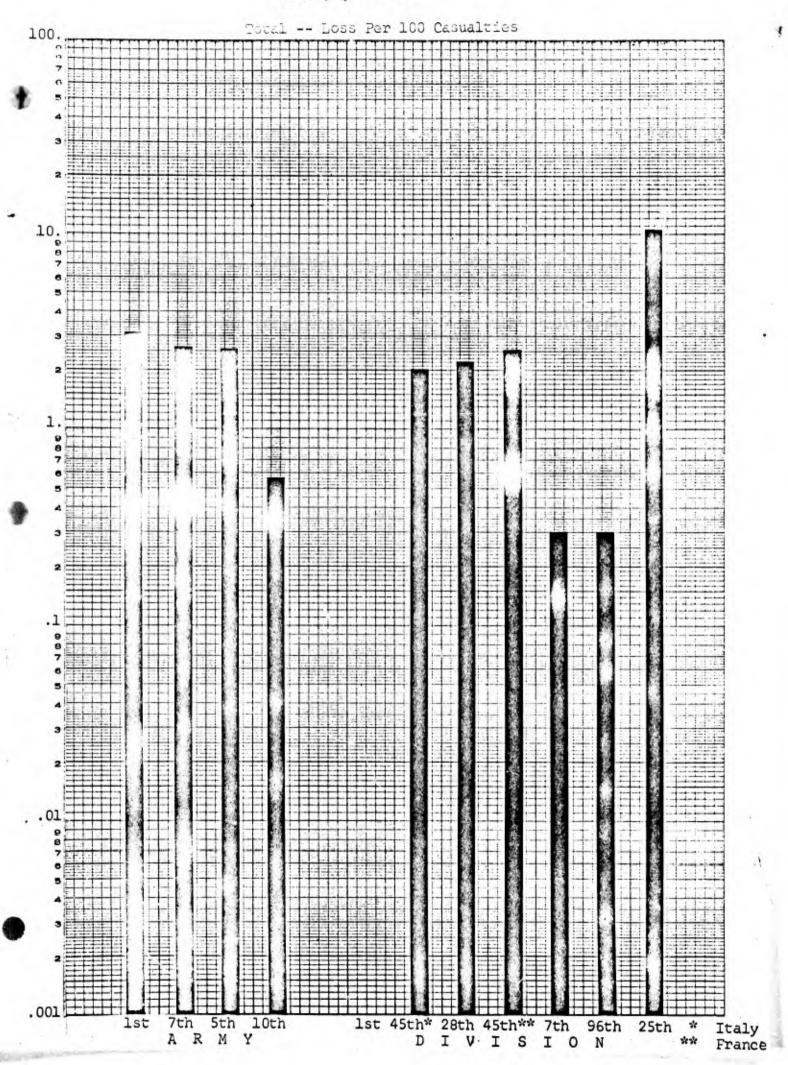


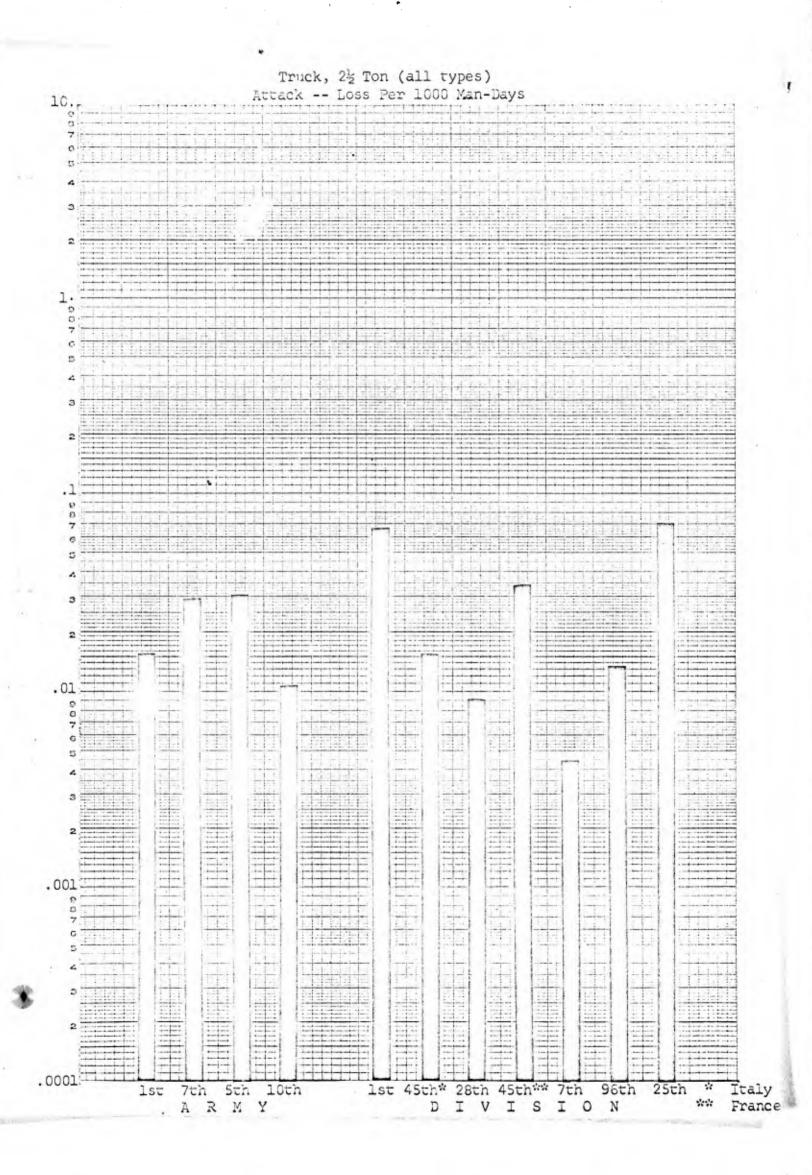
Truck, & Ton 4x4

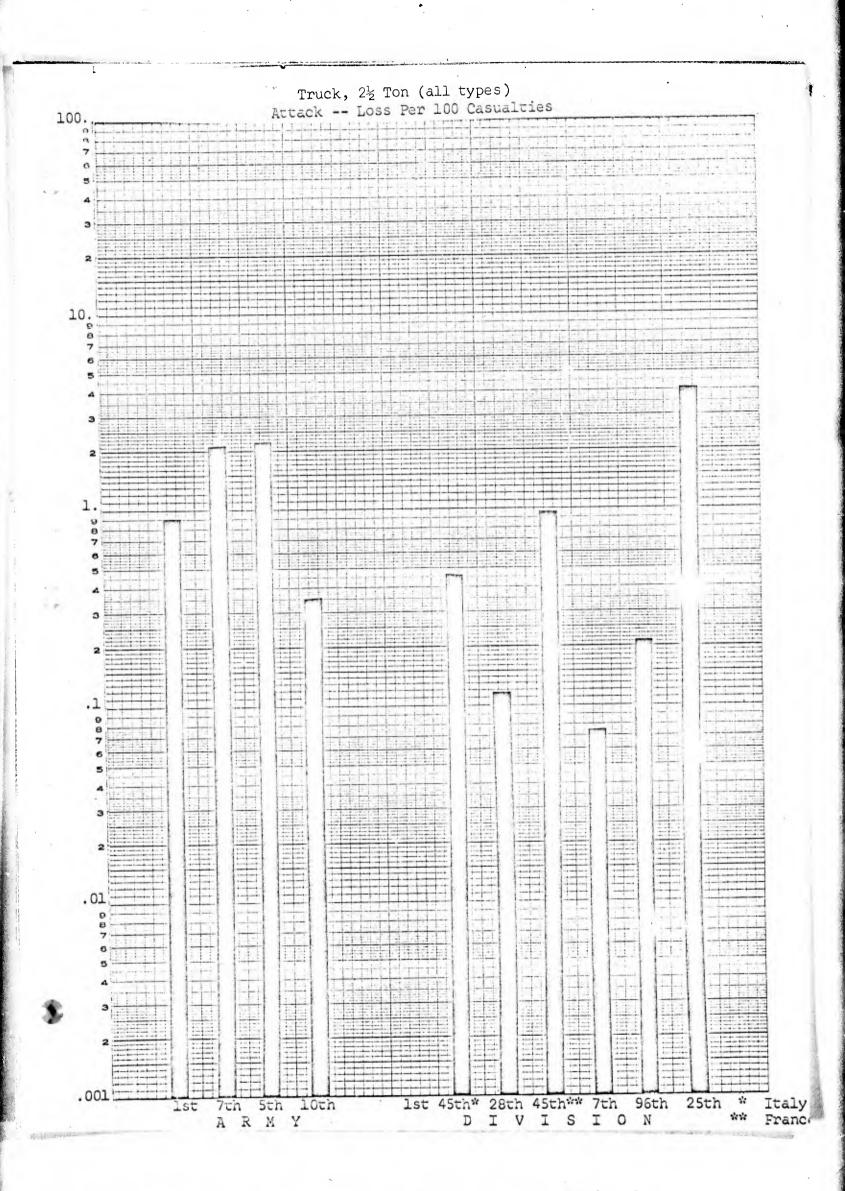


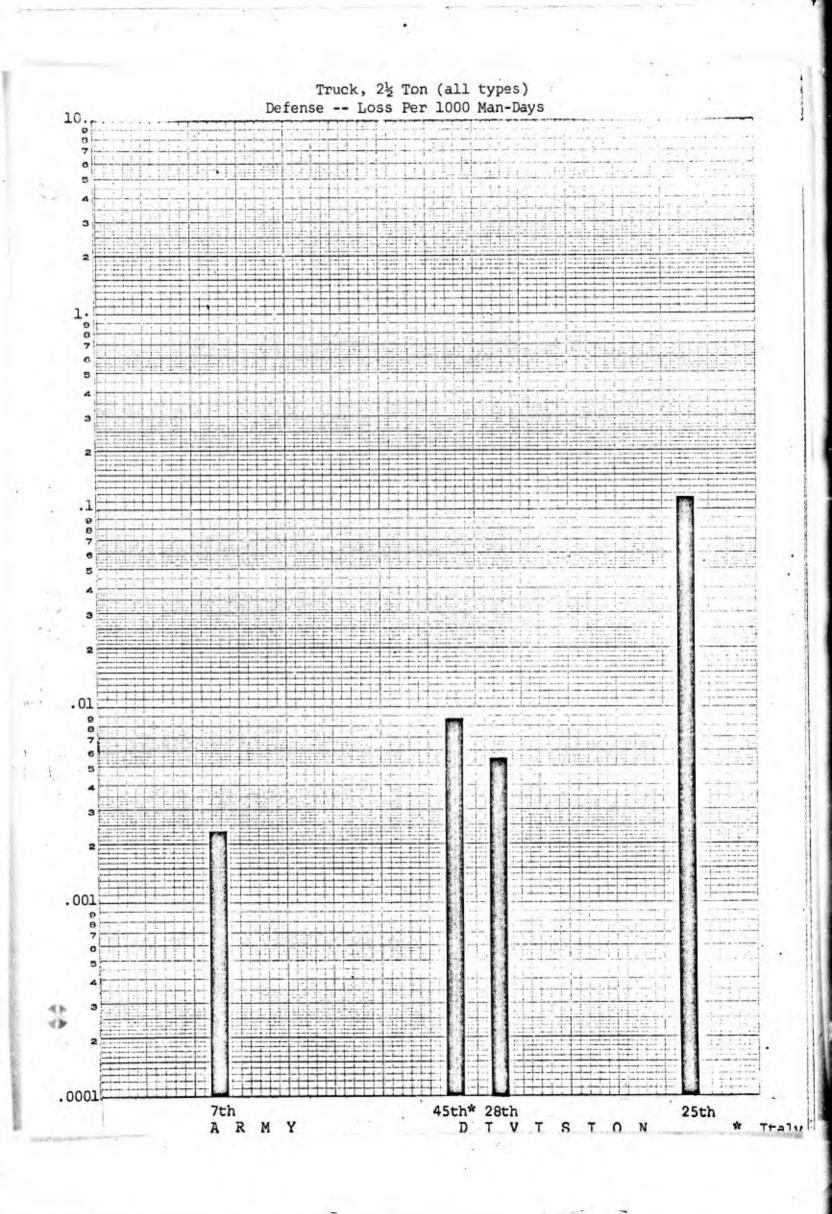
Truck, & Ton 4x4 Withdrawal -- Loss Per 100 Casualties 100. 10. 5 Hetelti: +++-1-+-.001 25th 2nd 28th DIVTSTON 1st 7th

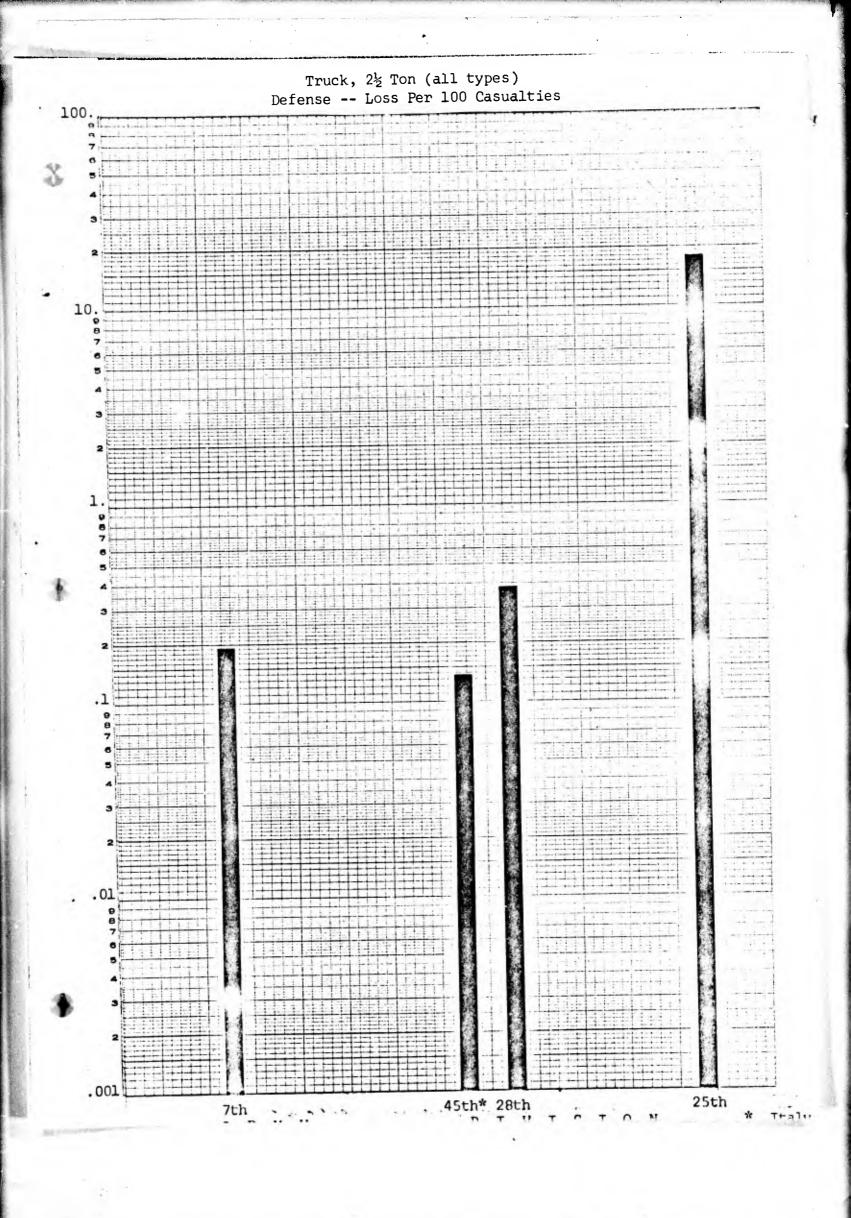


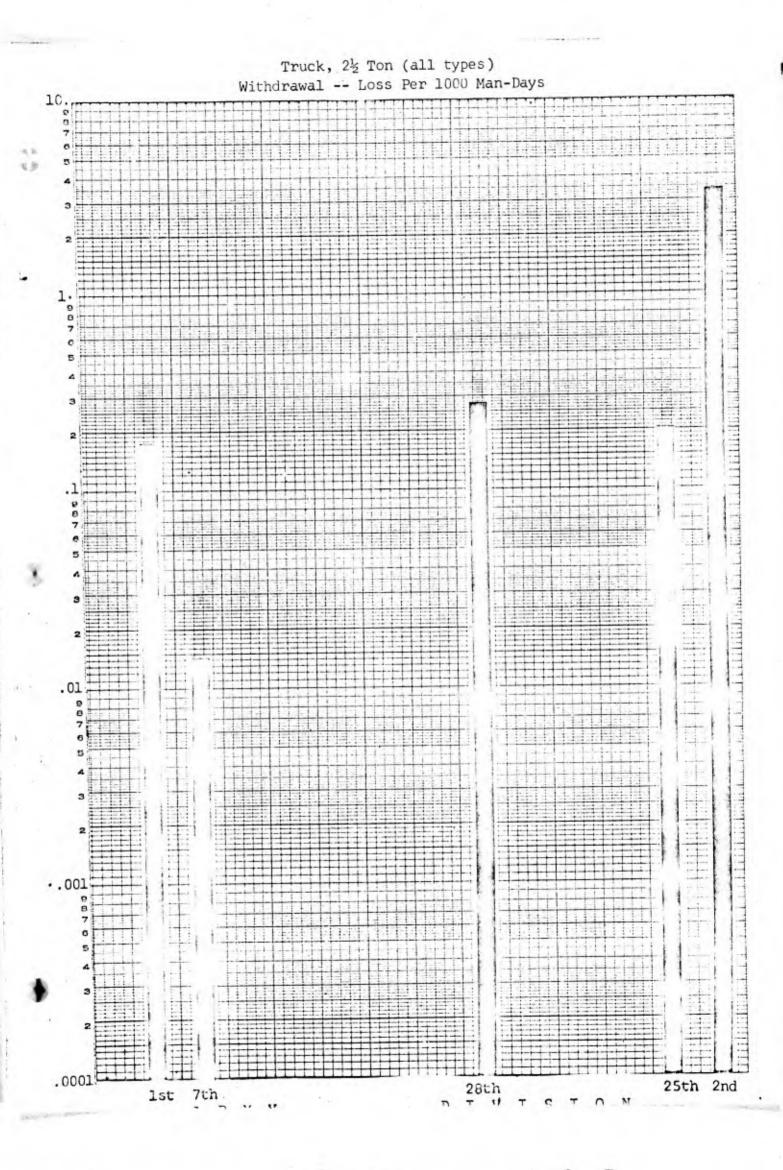


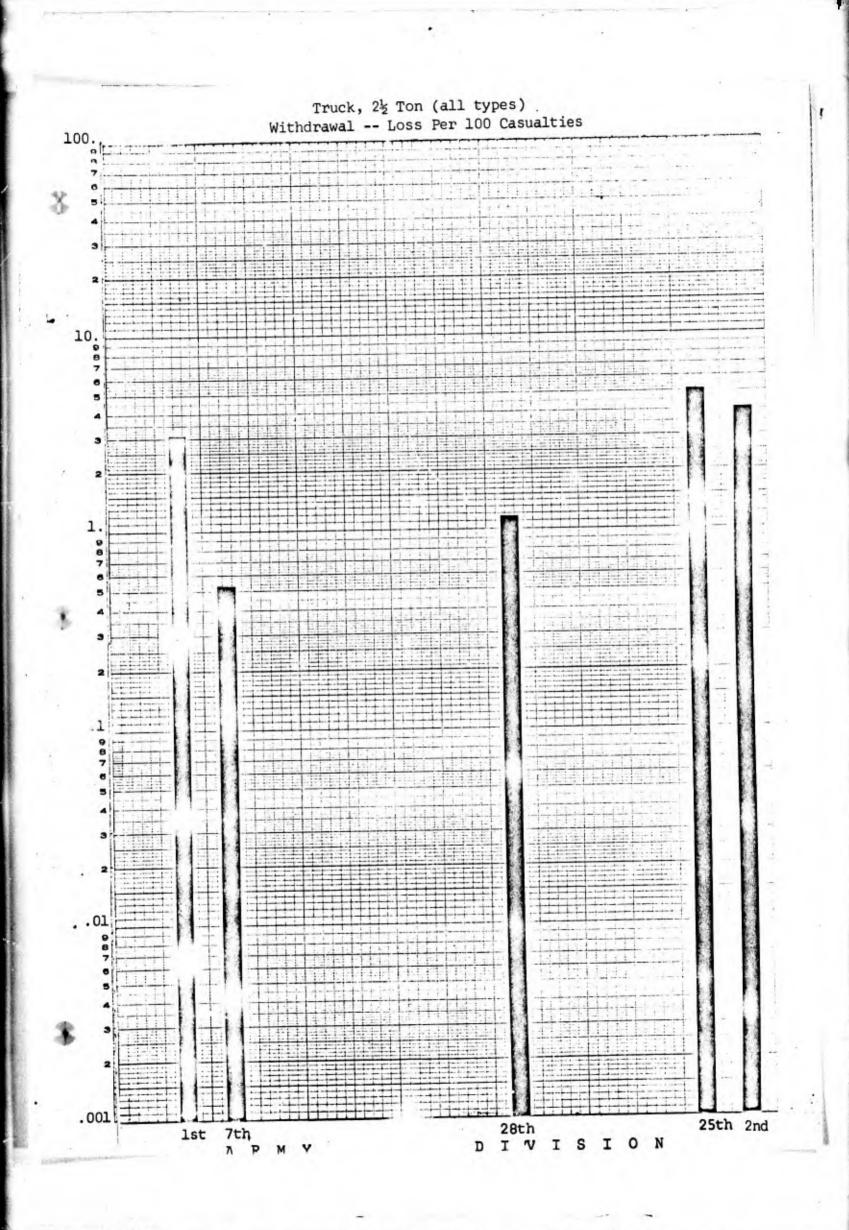












Truck, 2½ Ton (all types) Total -- Loss Per 1000 Man-Days 10: 8 .1 2 .01 9 ---.001 41-1-41 C 1.1.1 1-1-1-4.1. 

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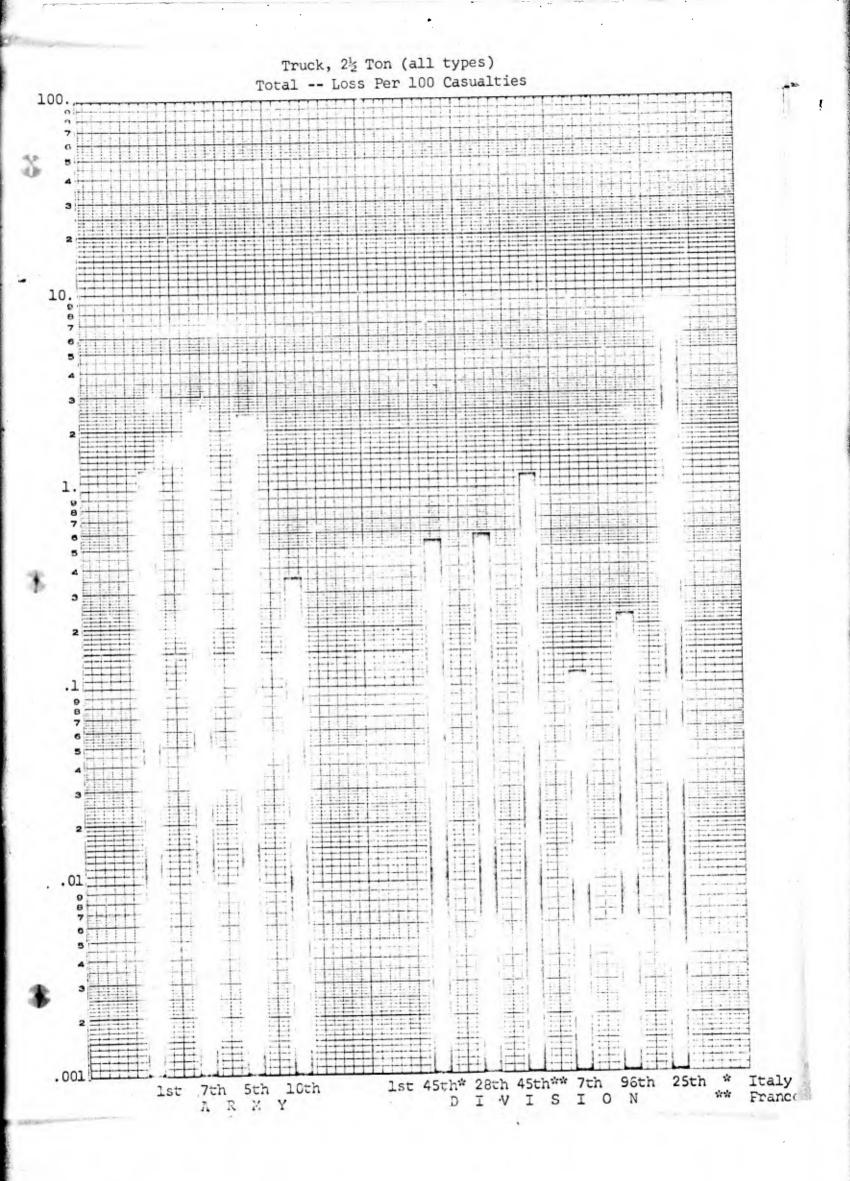
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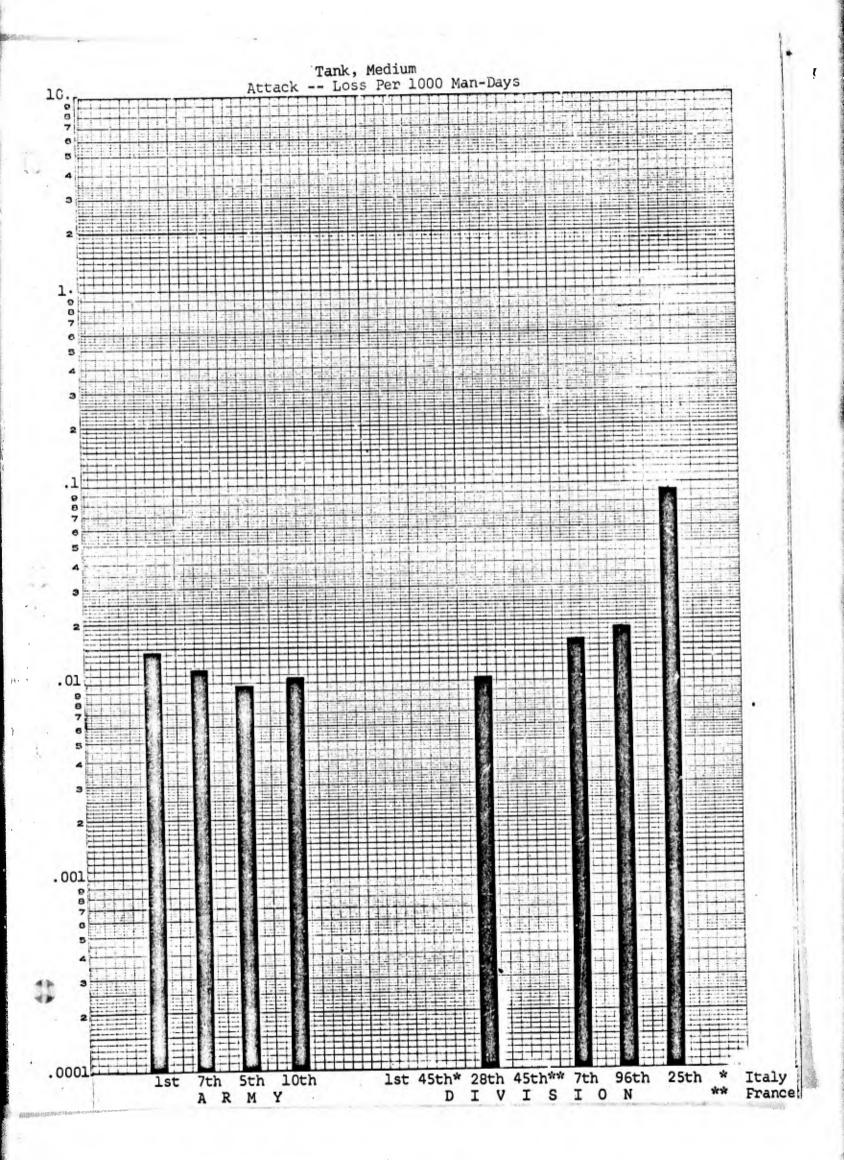
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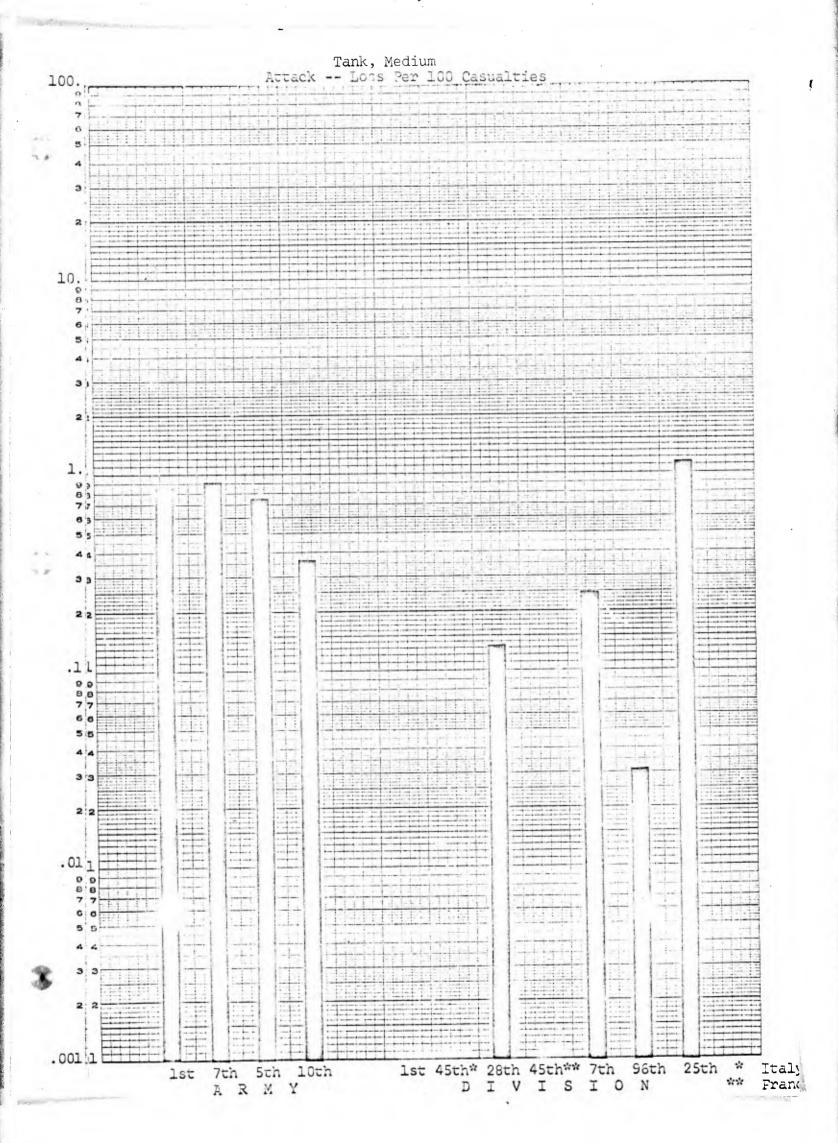
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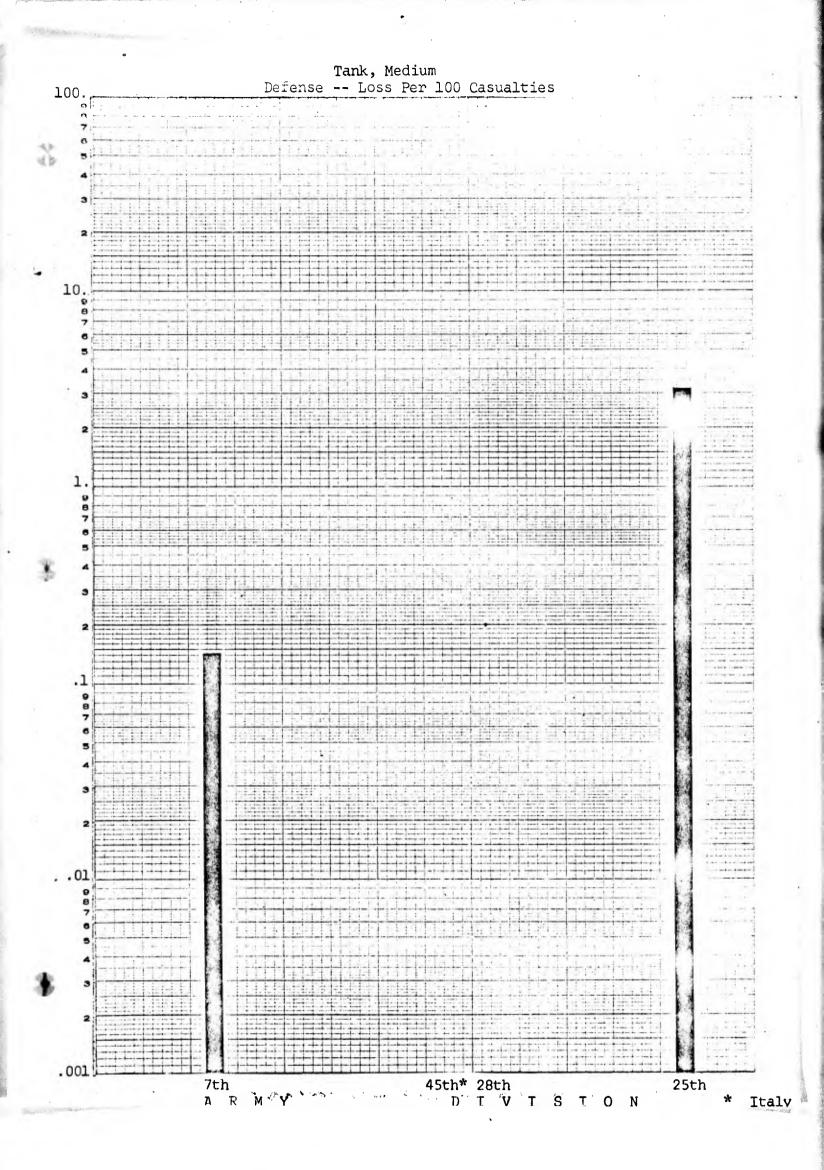
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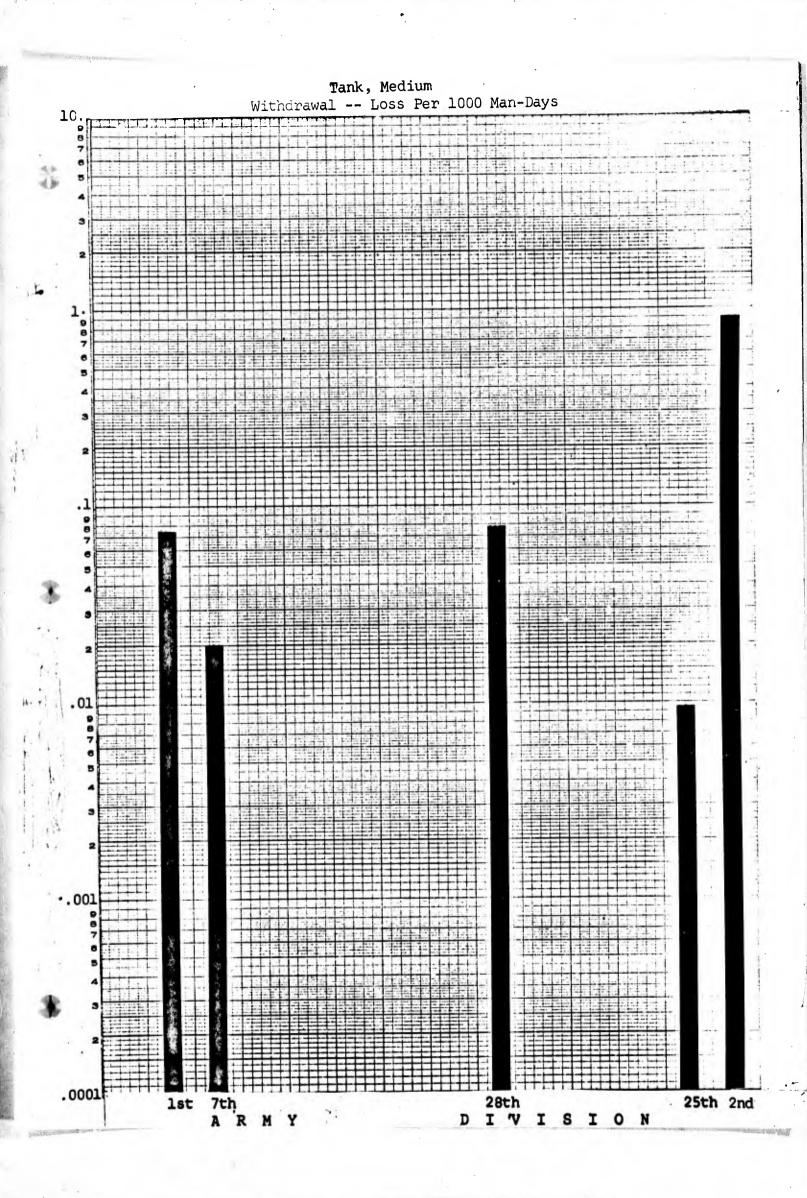


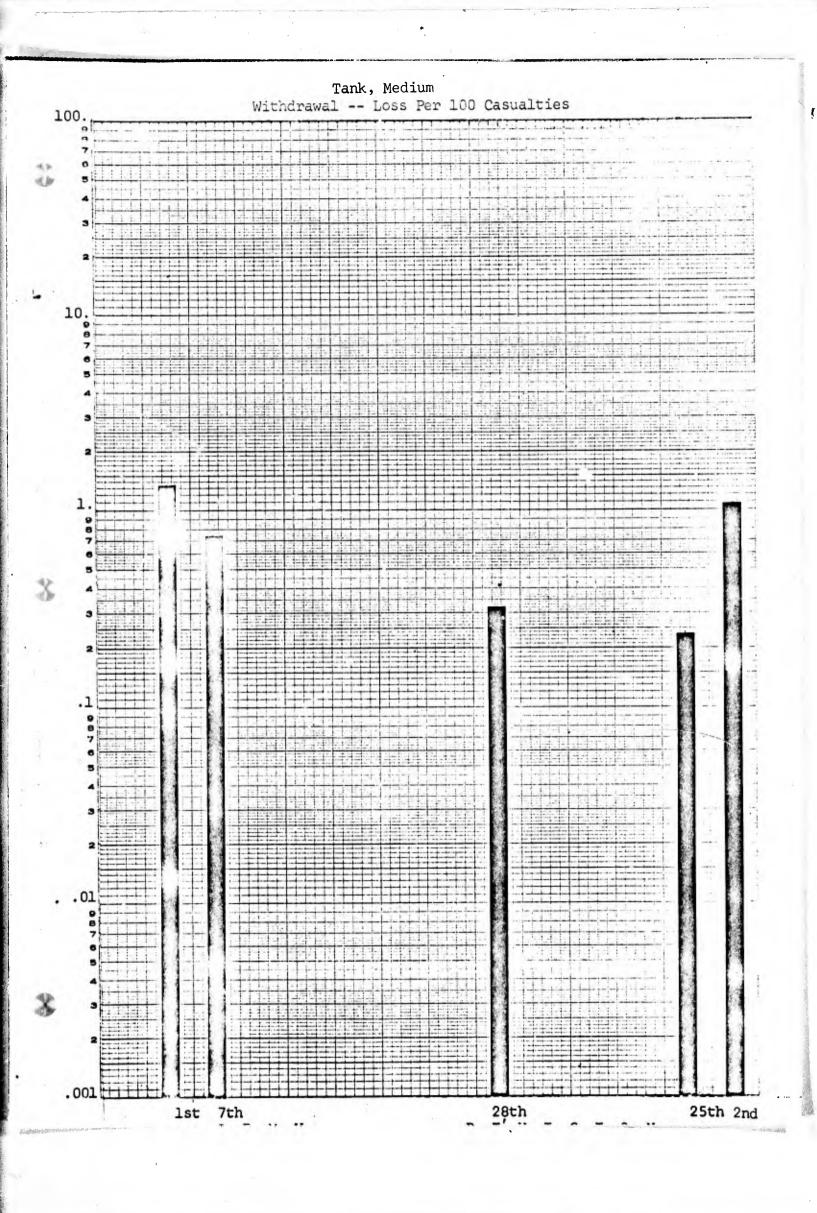




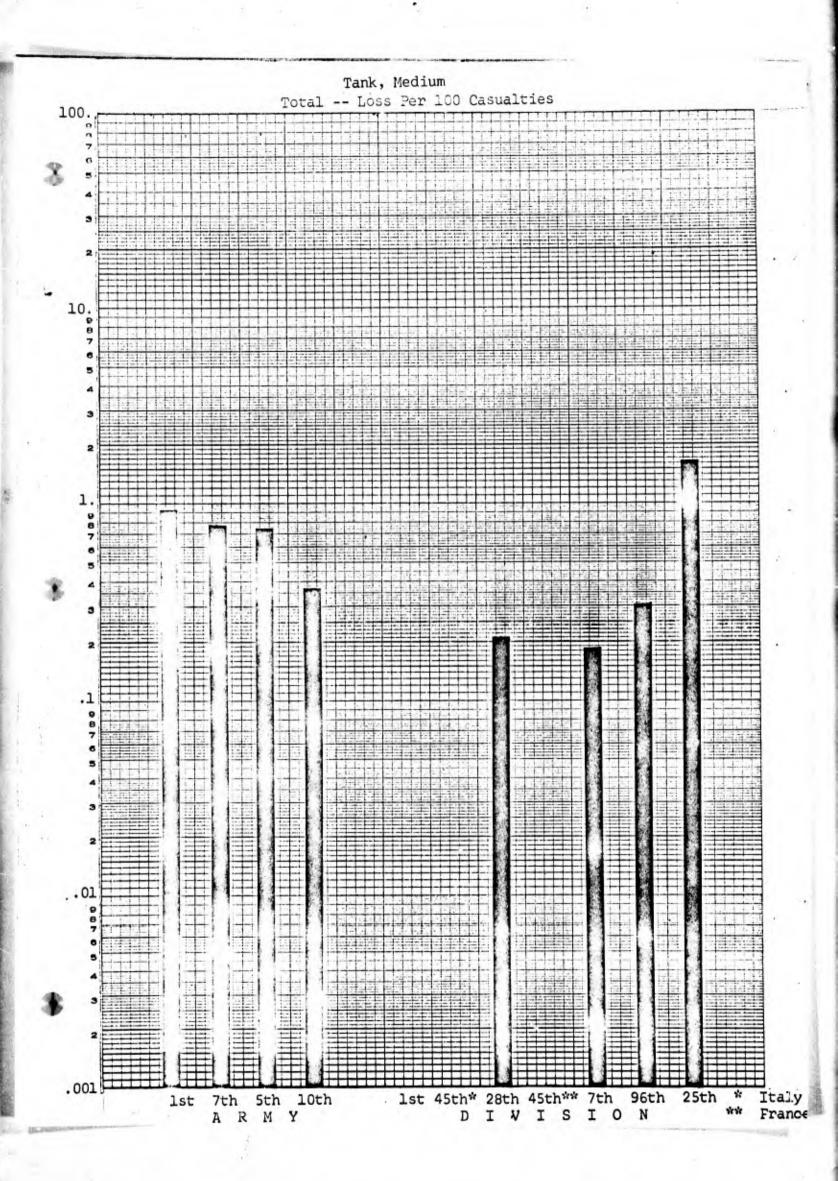
Tank, Medium
Defense -- Loss Per 1000 Man-Days 10. 1. 9 8 6 .01 9 8 7 6 2 .001 .0001 25th 15+h\* 28+h







Tank, Medium 10. Total -- Loss Per 1000 Man-Days 1. ..001 7th 5th A R M Y lst 1st 45th\* 28th 45th\*\* I V. I S 7th 96th Italy D I SION France



Carbine, .30, Ml Attack -- Loss Per 1000 Man-Days 10 ... 1. 987 G 2 .1 .8 .8 .7 .7 .6 .5 .1 11 1 --1000 4 2 .01 .1 6 5 1 1 77 2 .001 ---1 H 

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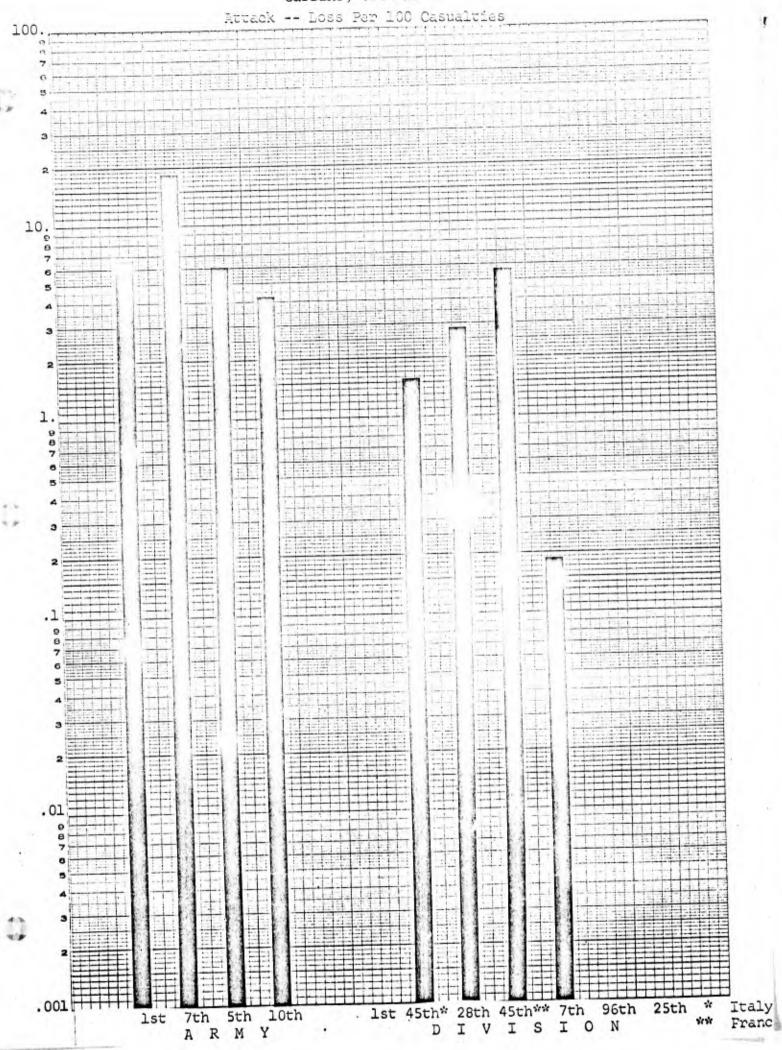
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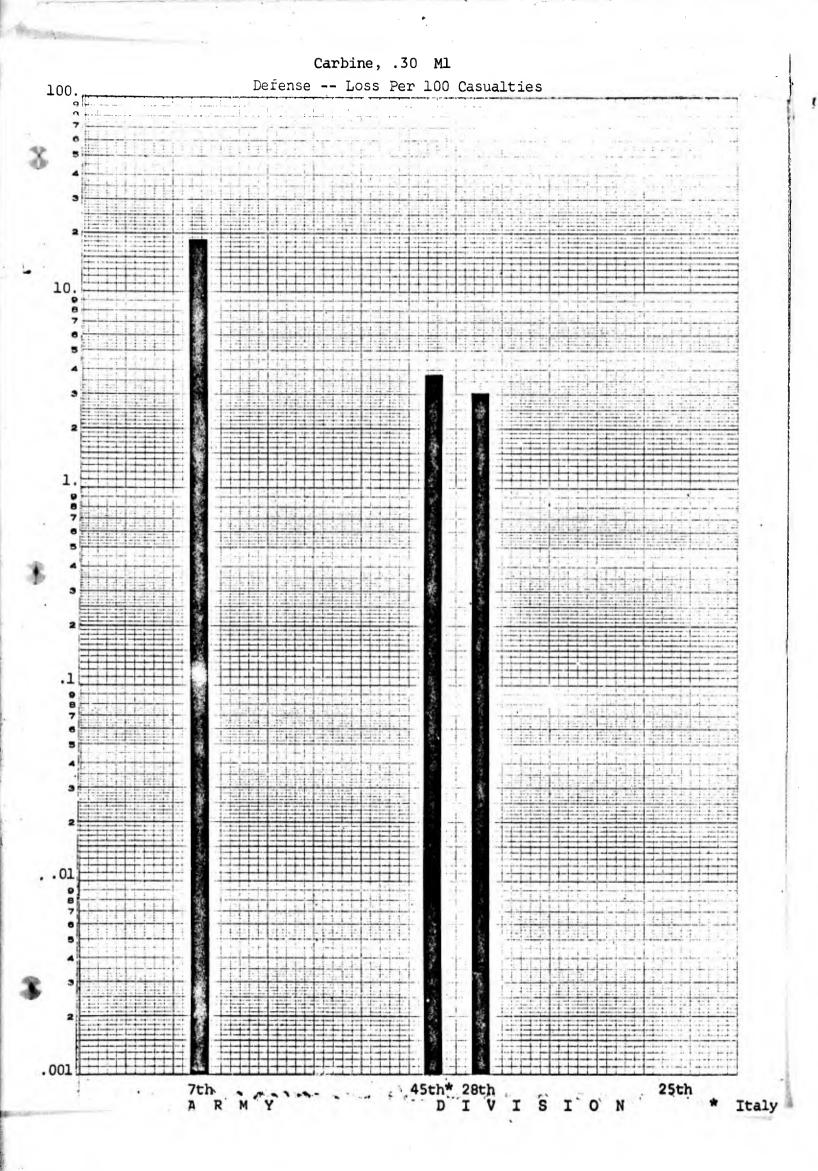
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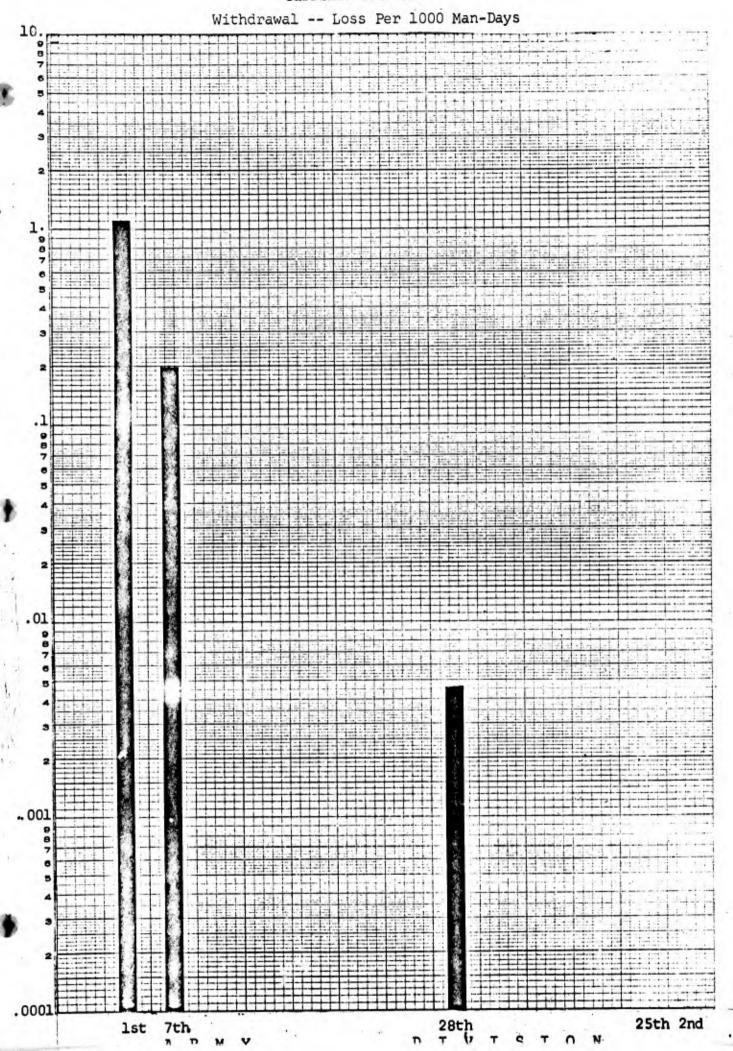
Carbine, .30 Ml



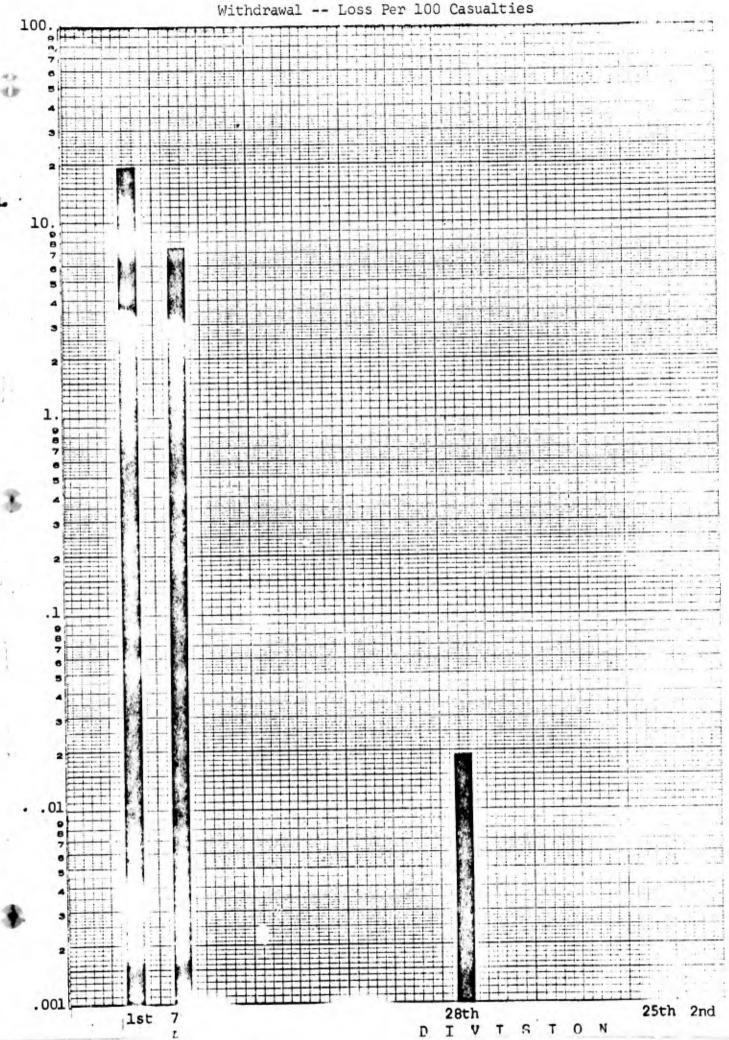
Carbine, .30, Ml Defense -- Loss Per 1000 Man-Days 10. a 98 .01 6 5 وأراور والمراجية المتاهي والمتاهور 17 .001 9 .0001 Tall E 45th\* · 28th 25th 7th DIVISION Ital ARMY

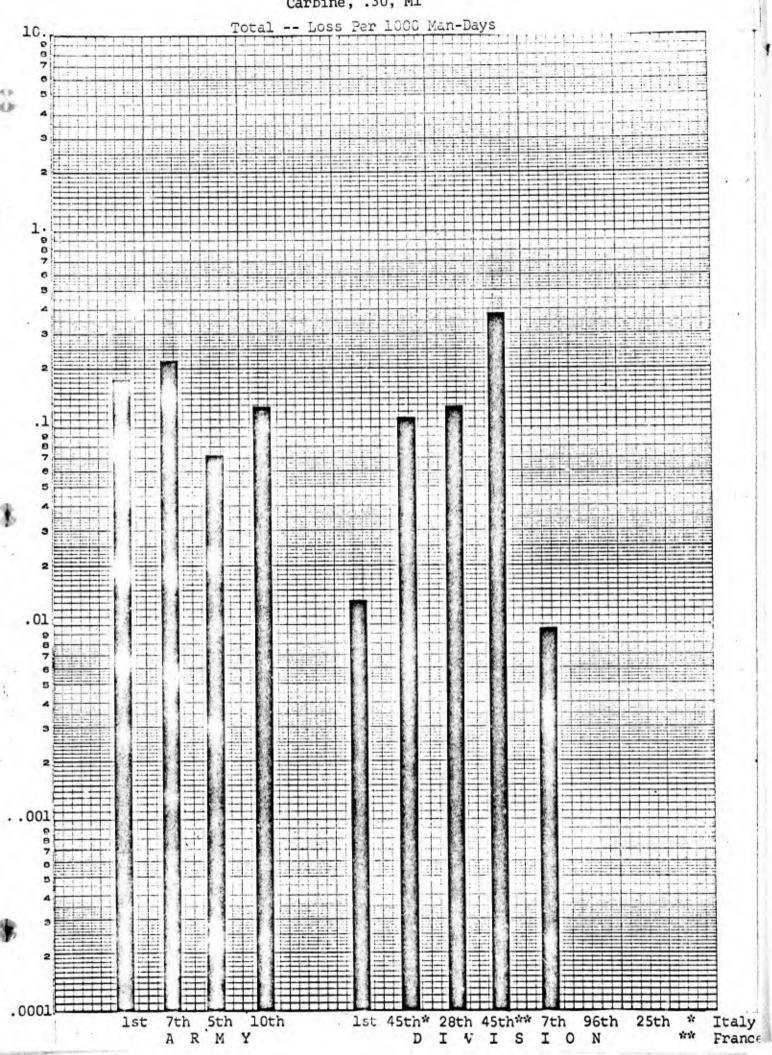


Carbine. . . 30 Ml



Carbine, .30, Ml
Withdrawal -- Loss Per 100 Casualties





Carbine, .30, Ml Total -- Loss Per 100 Casualties 100., 10. 1-3 1 3 

1st 45th\* 28th 45th\*\* 7th 96th 25th \*

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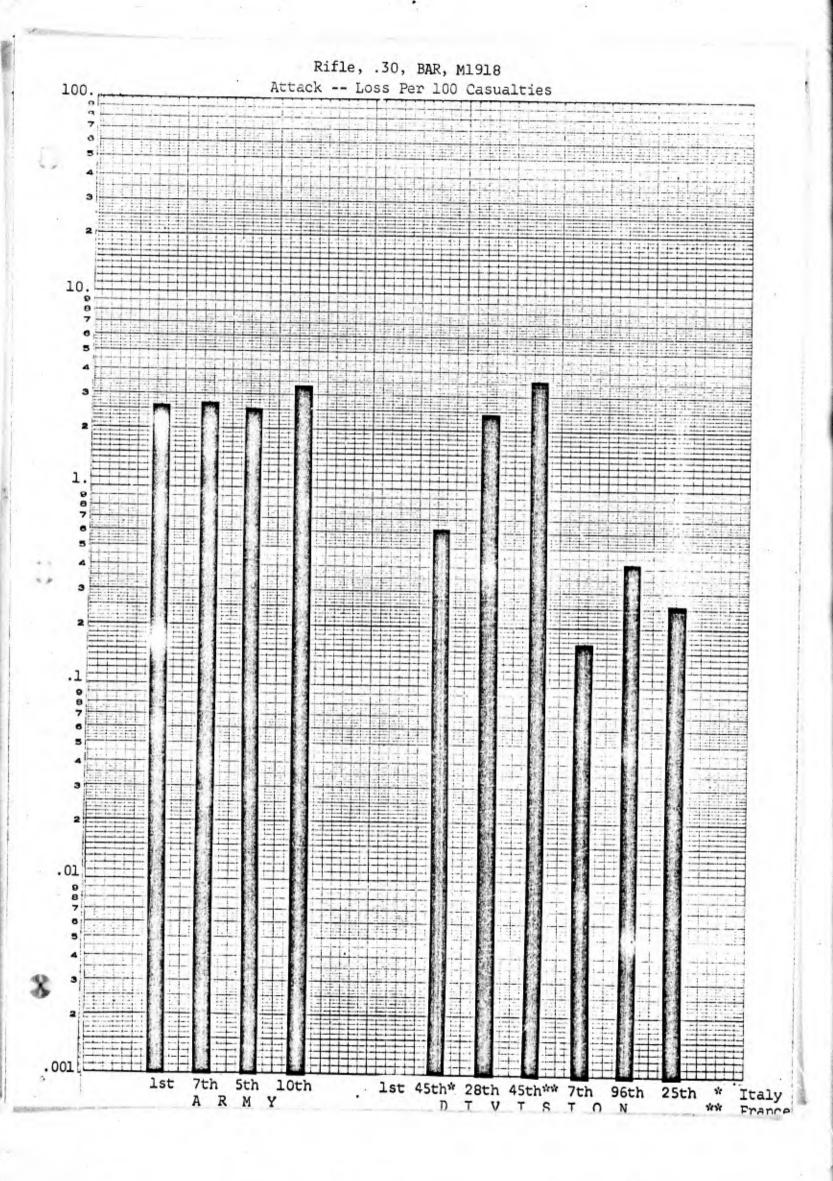
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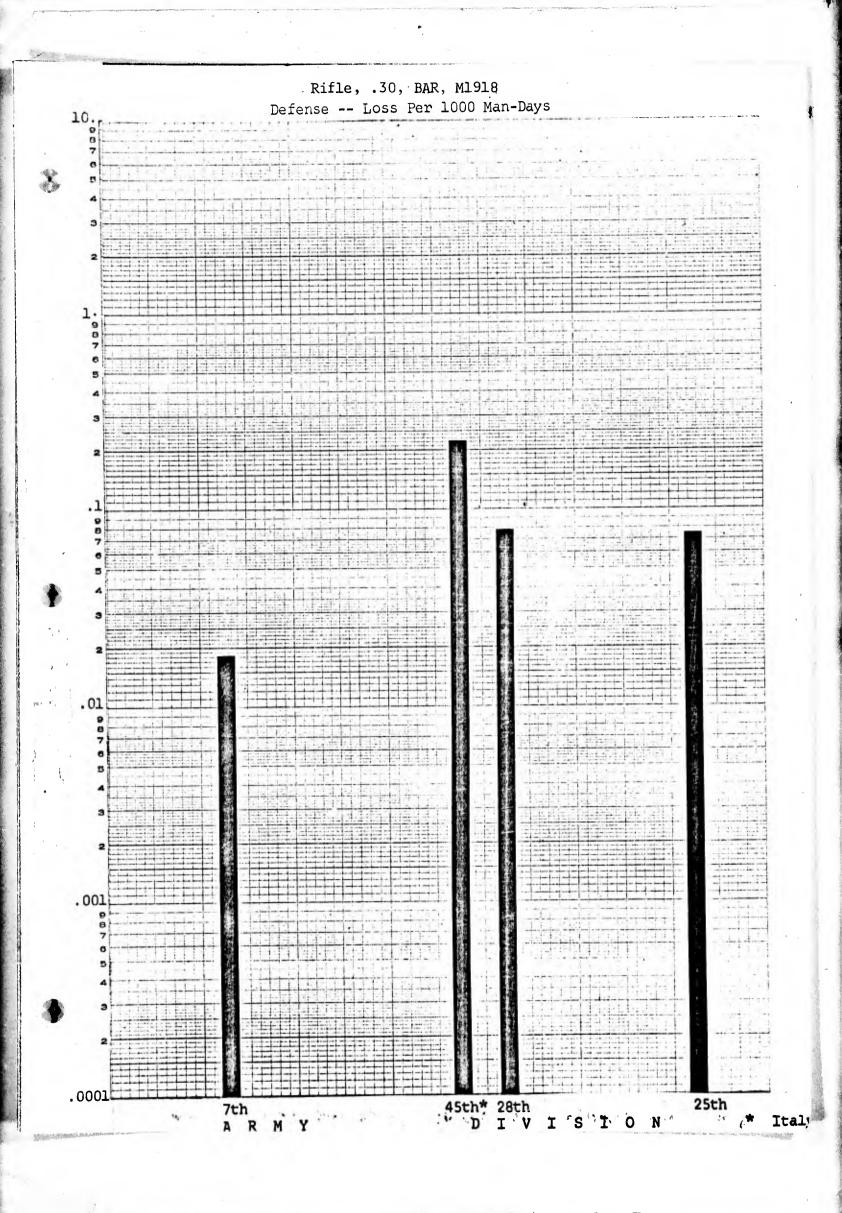
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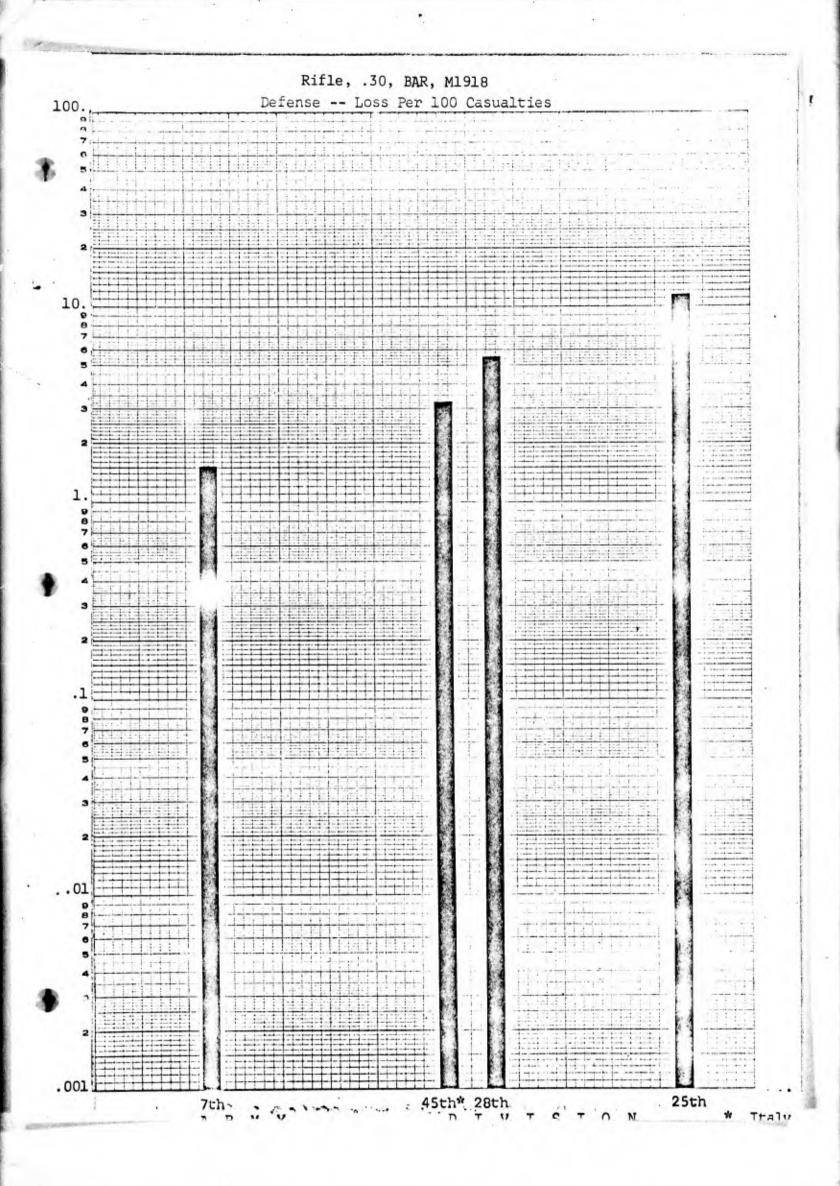
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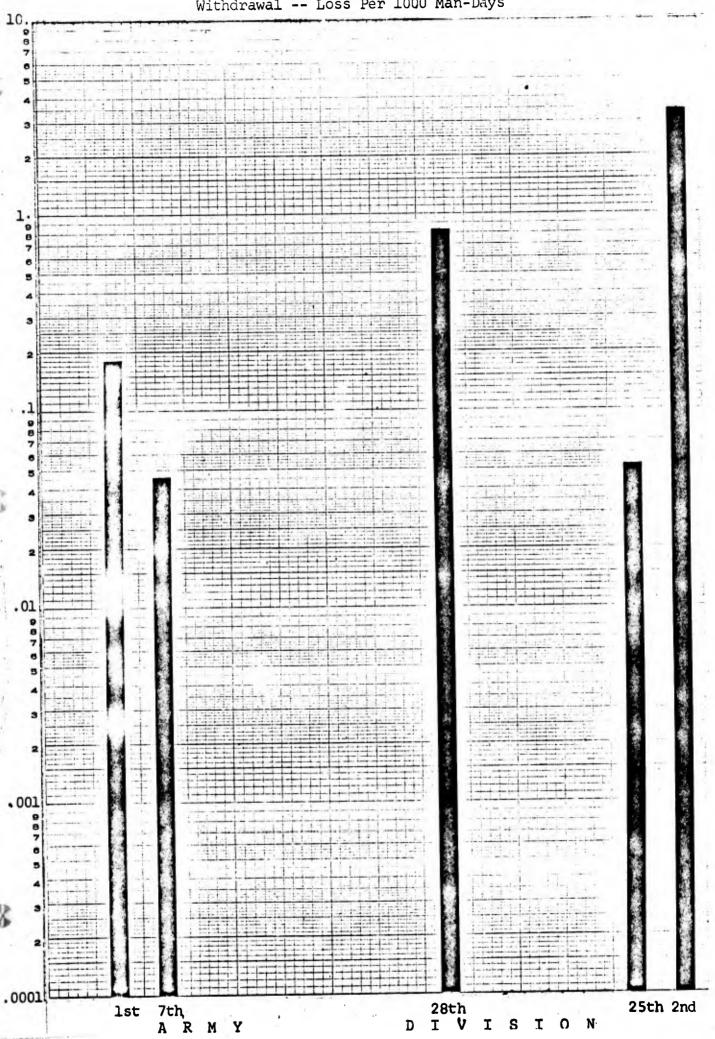
Rifle, .30, BAR M1918 Attack -- Loss Per 1000 Man-Days 10. 8 9 .1 .1 -3 Literate 13 11 픨 .001 6 5 4 11 2 1-13 Œ .0001 7th 5th 10th | 1st 45th\* 28th 45th\*\* 7th 96th lst DTVTSTON D M \*\*







Rifle, .30, BAR, M1918
Withdrawal -- Loss Per 1000 Man-Days

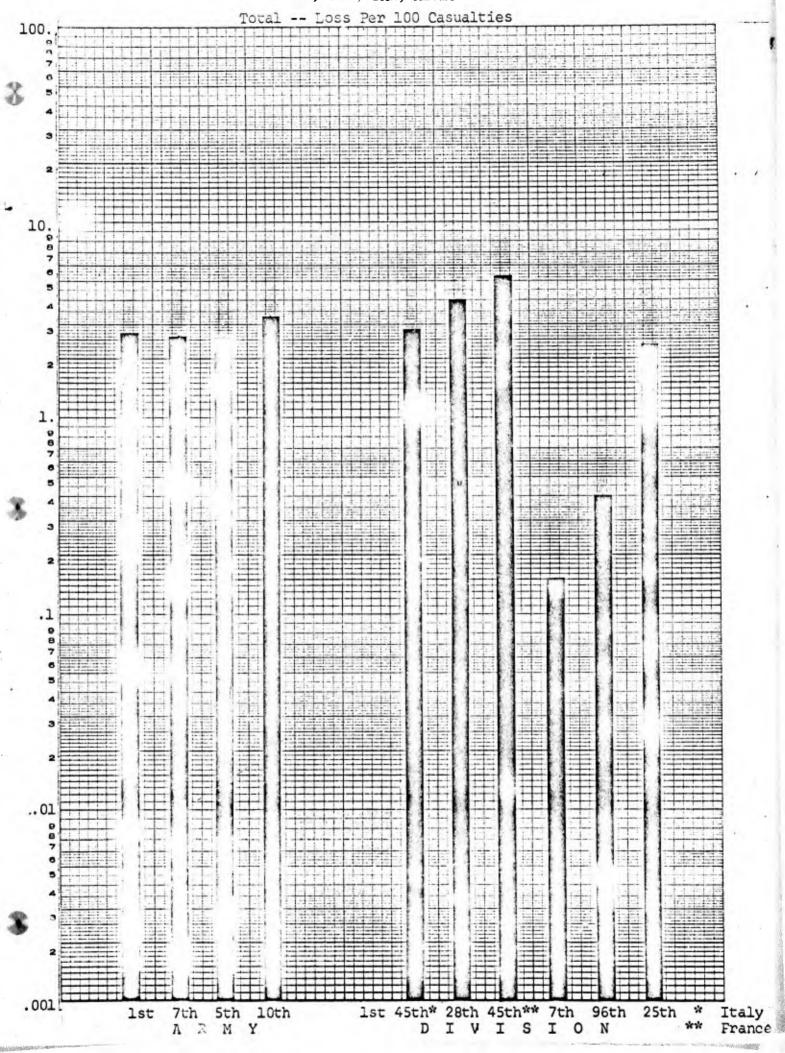


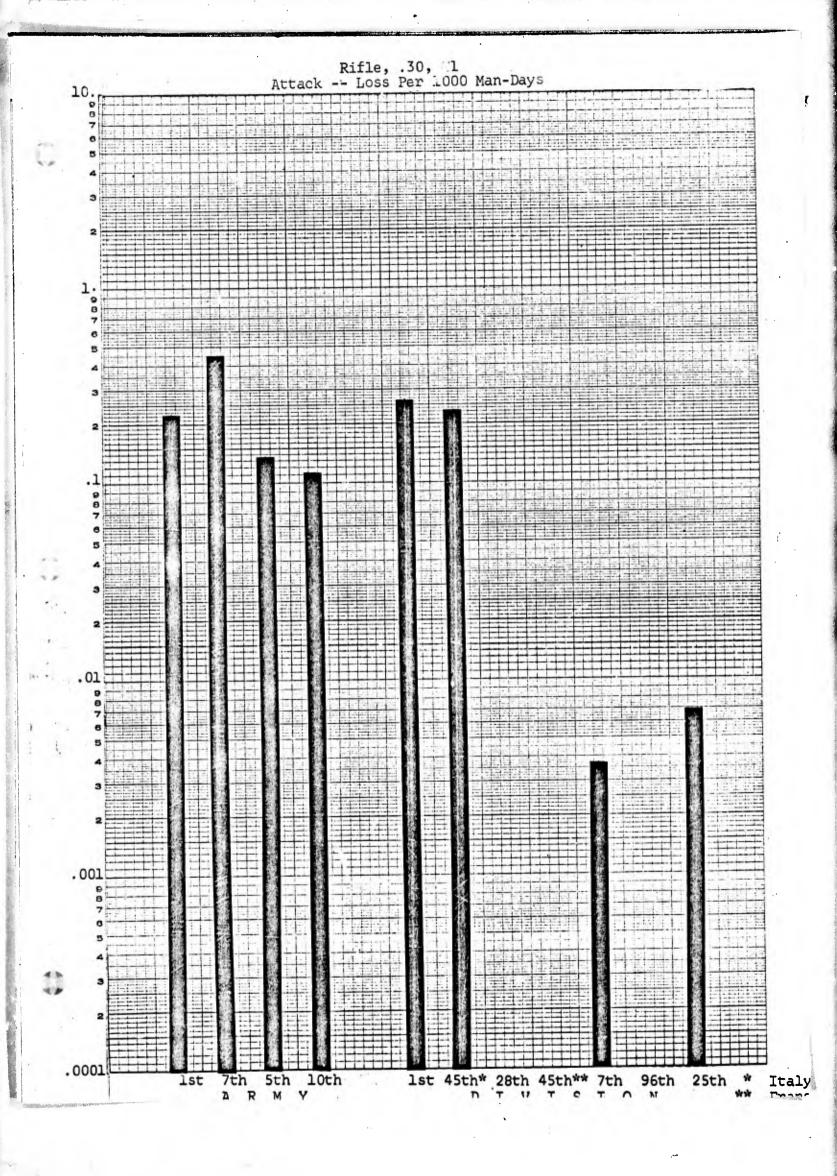
Rifle, .30, BAR, M1918 Withdrawal -- Loss Per 100 Casualties 100. 10. . .01 0 0 7 - dark .001 28th 25th 7th. lst D I V ISION A T

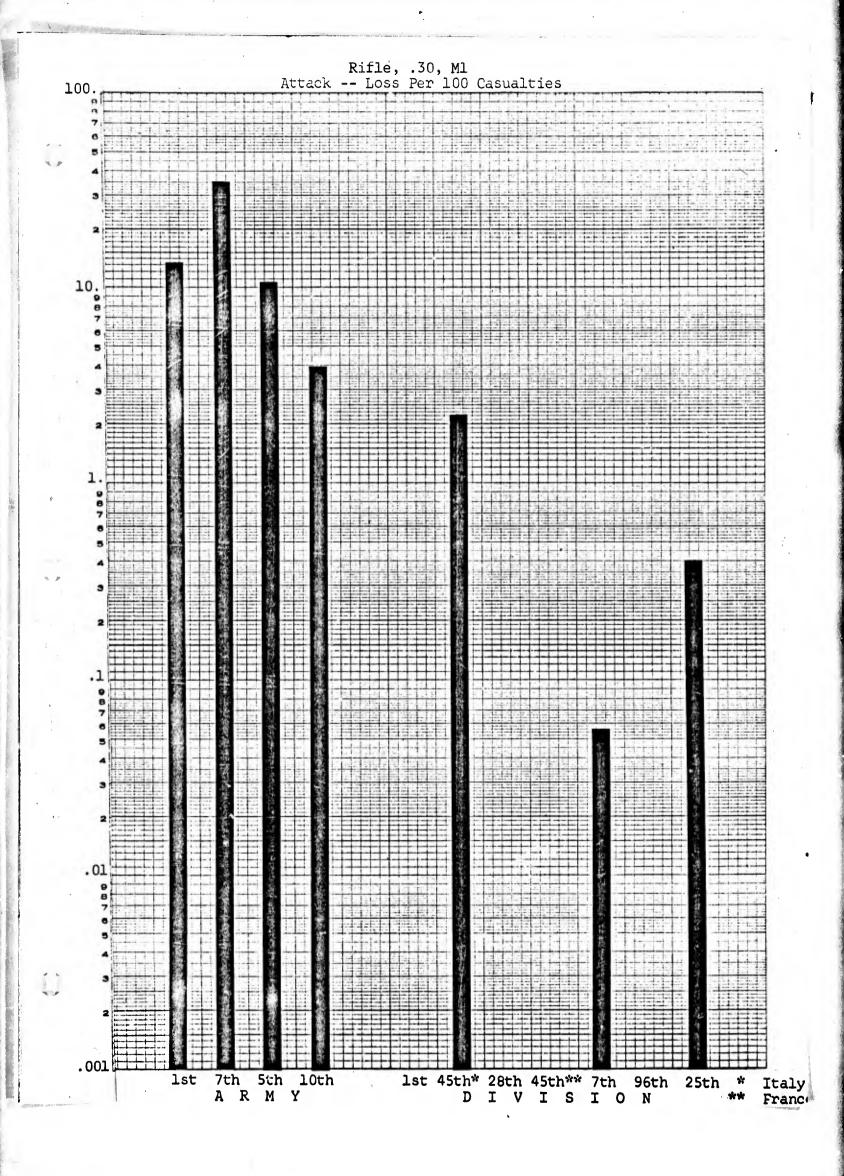
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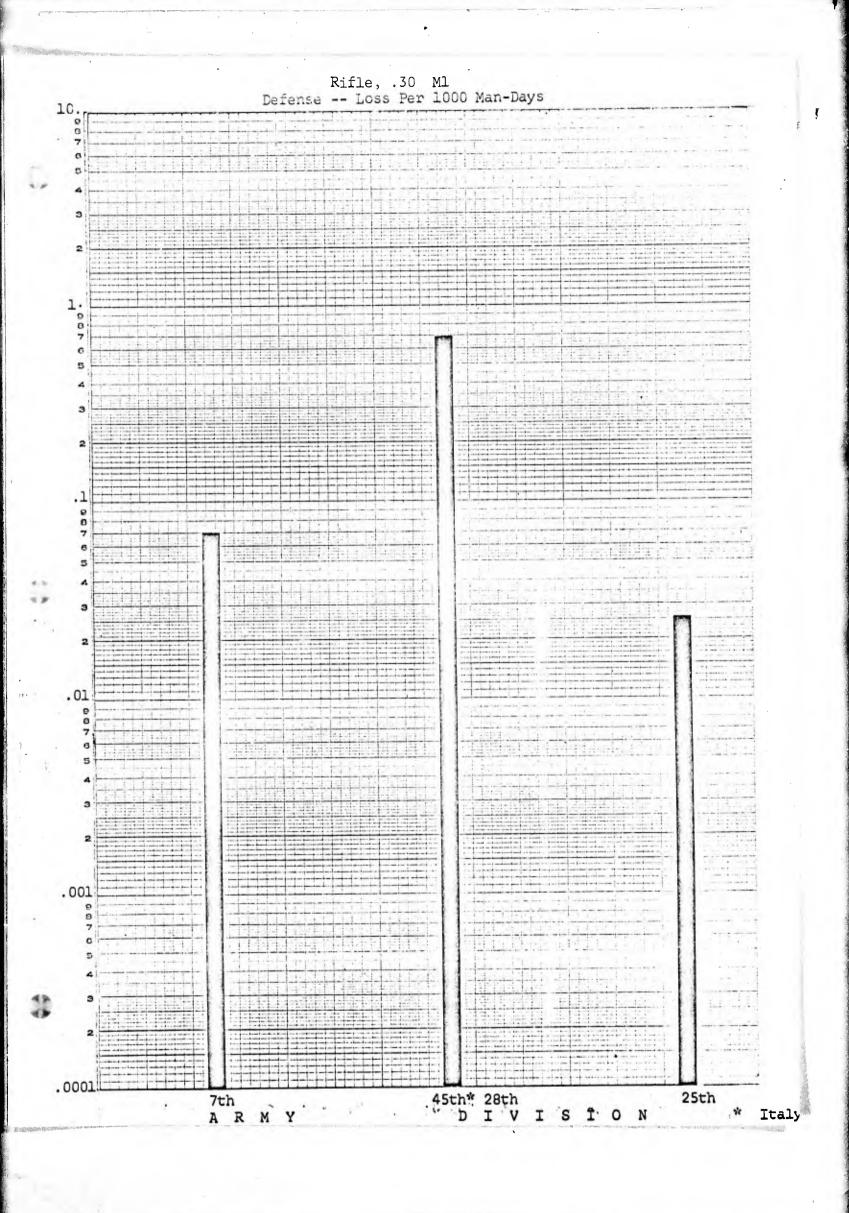
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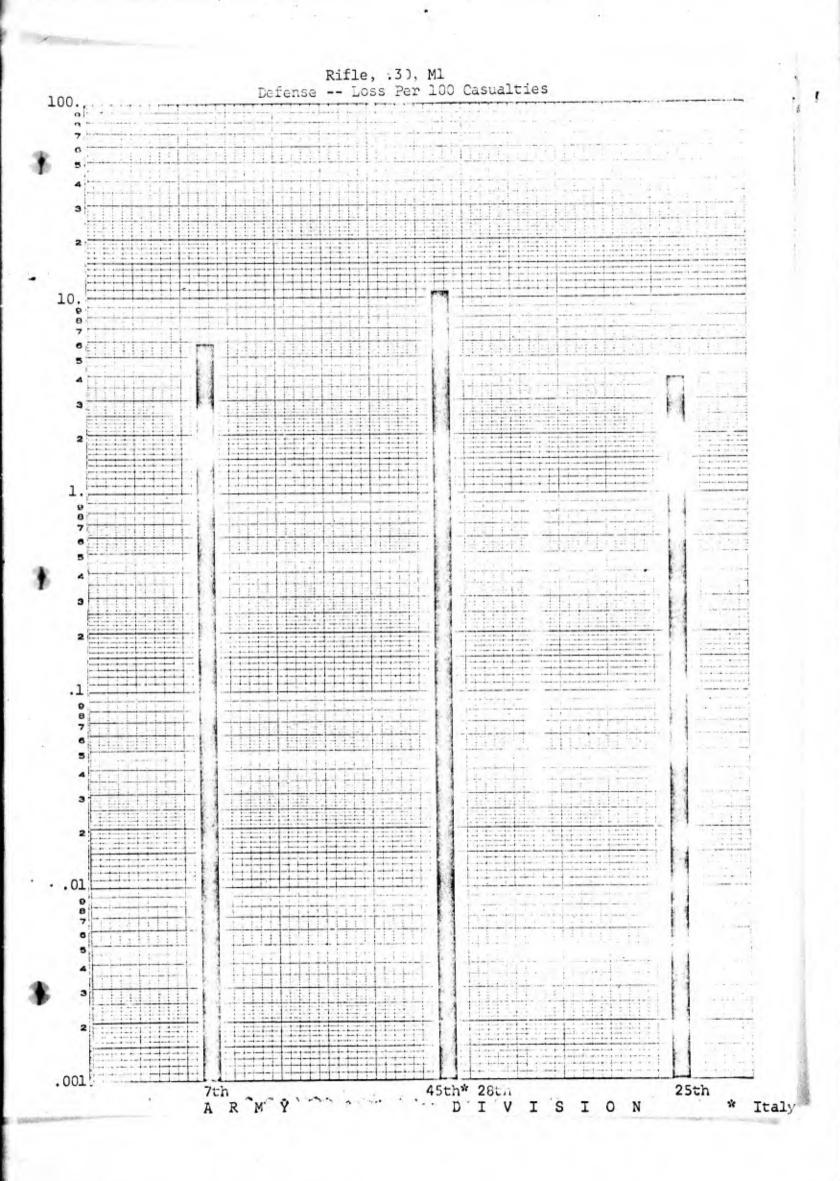
Rifle, .30, BAR, M1918

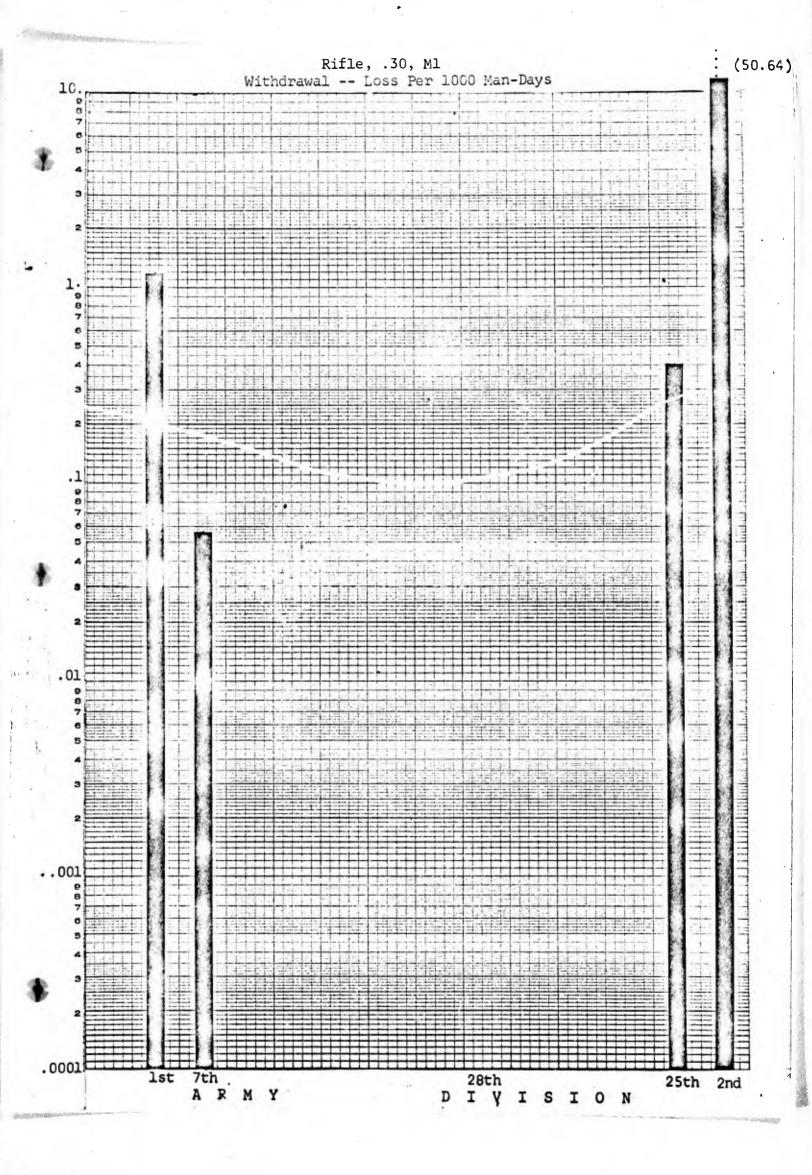


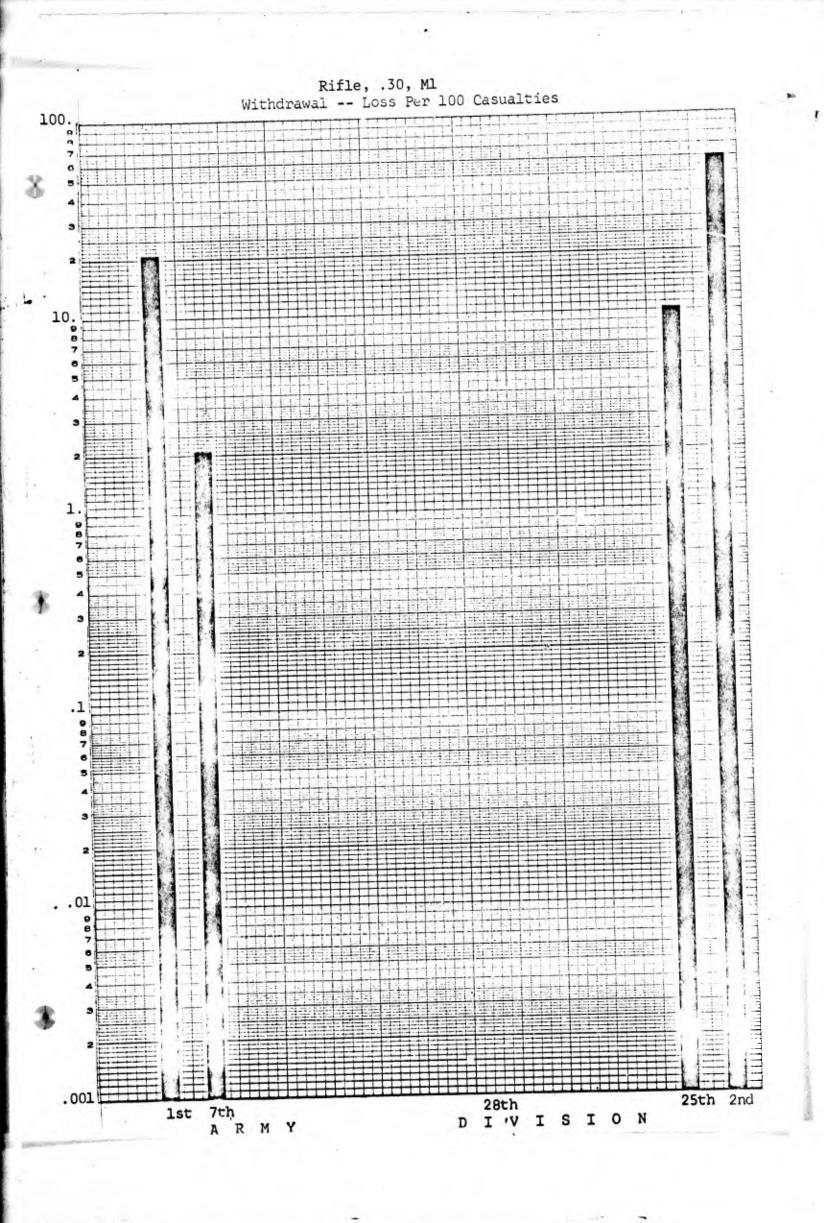


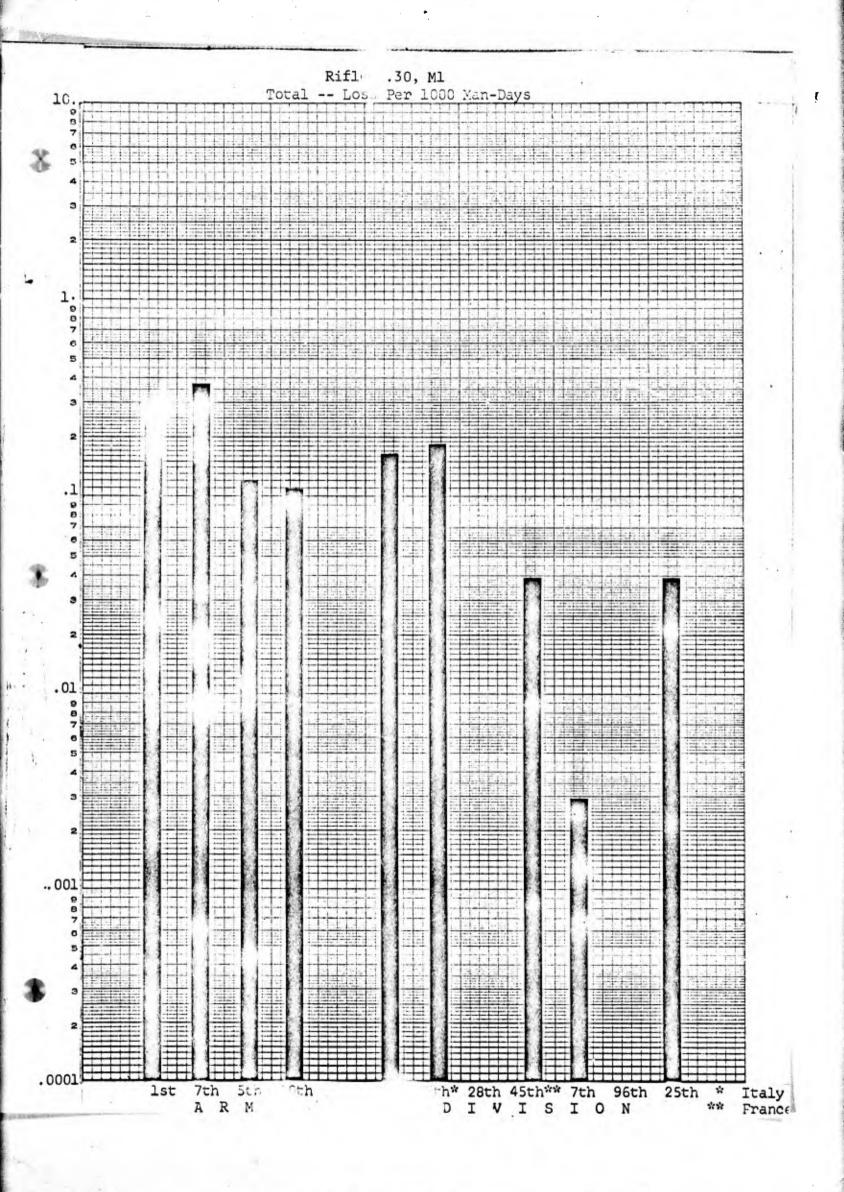












Rifle, .30, Ml 100. Total -- Loss Per 100 Casualties 10. 9 2 5 .1 量 11-1-1-

1st 45th\* 28th 45th\*\* 7th 96th

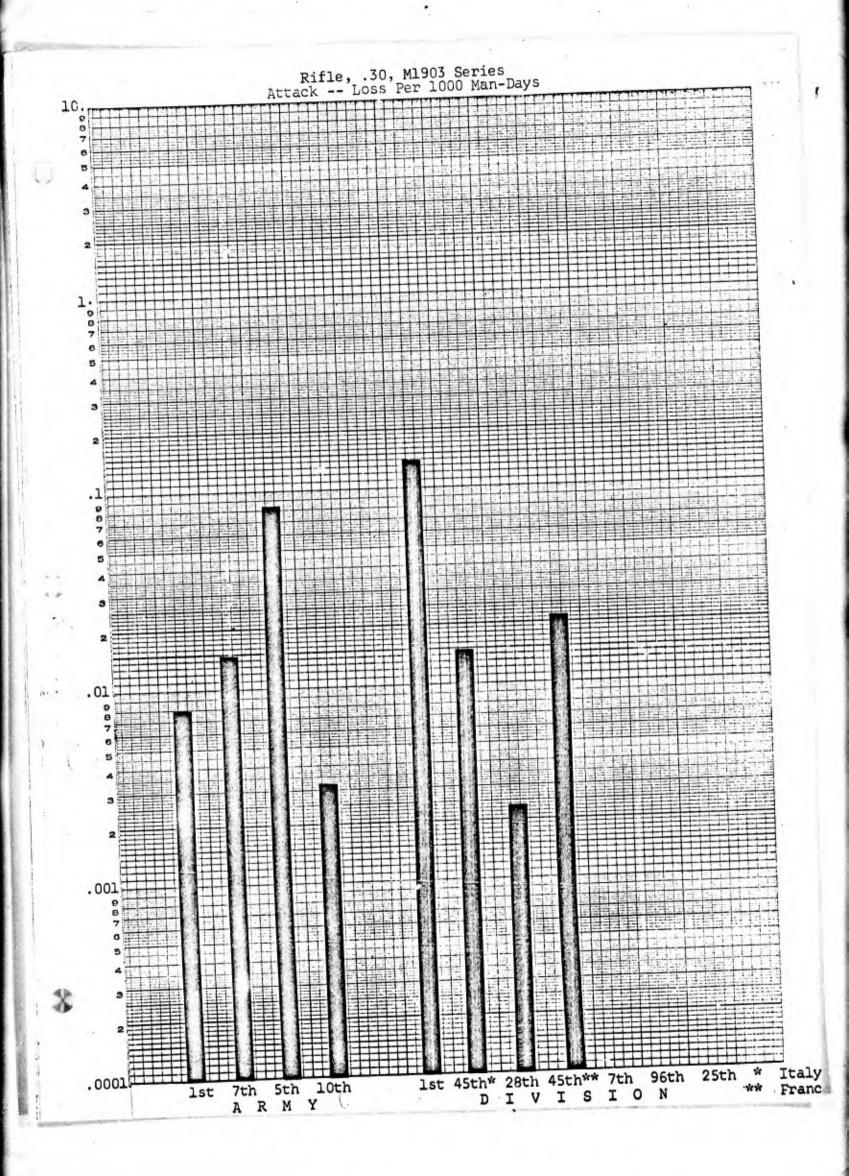
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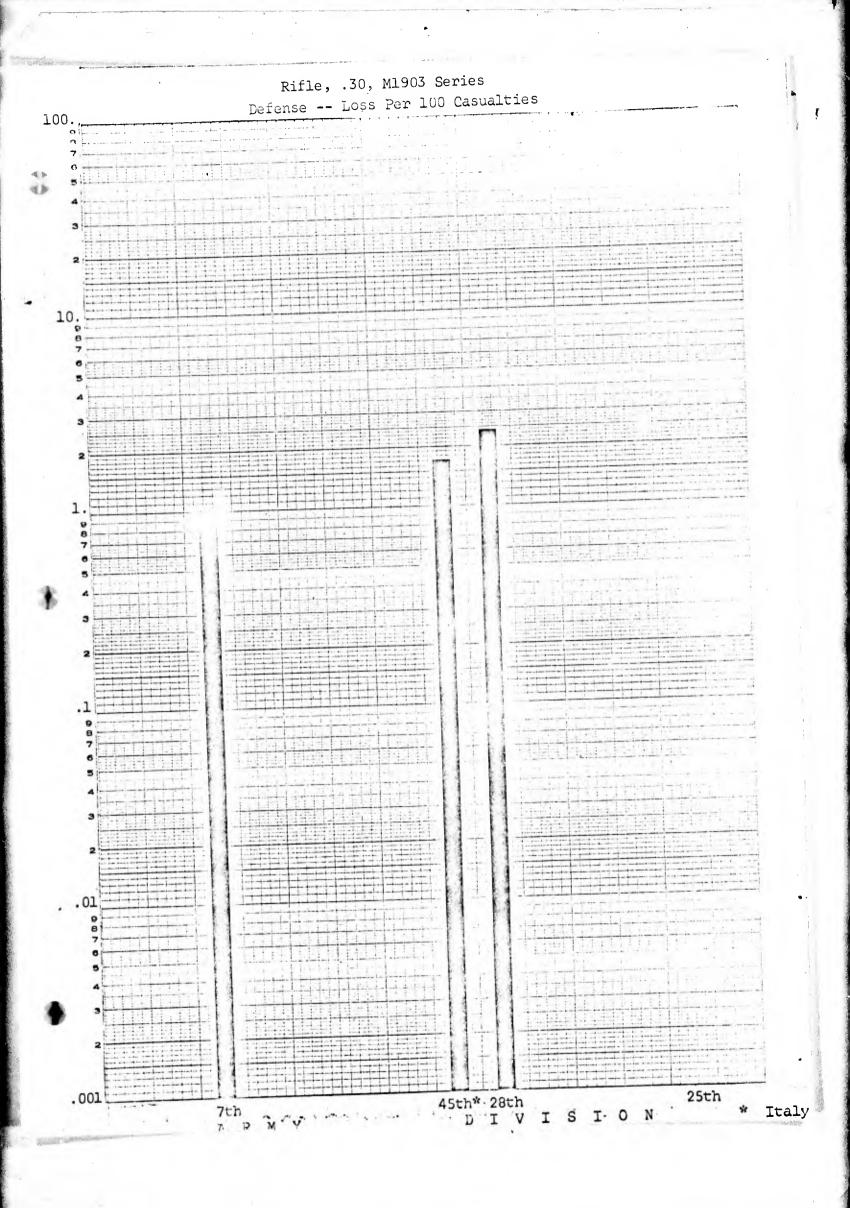
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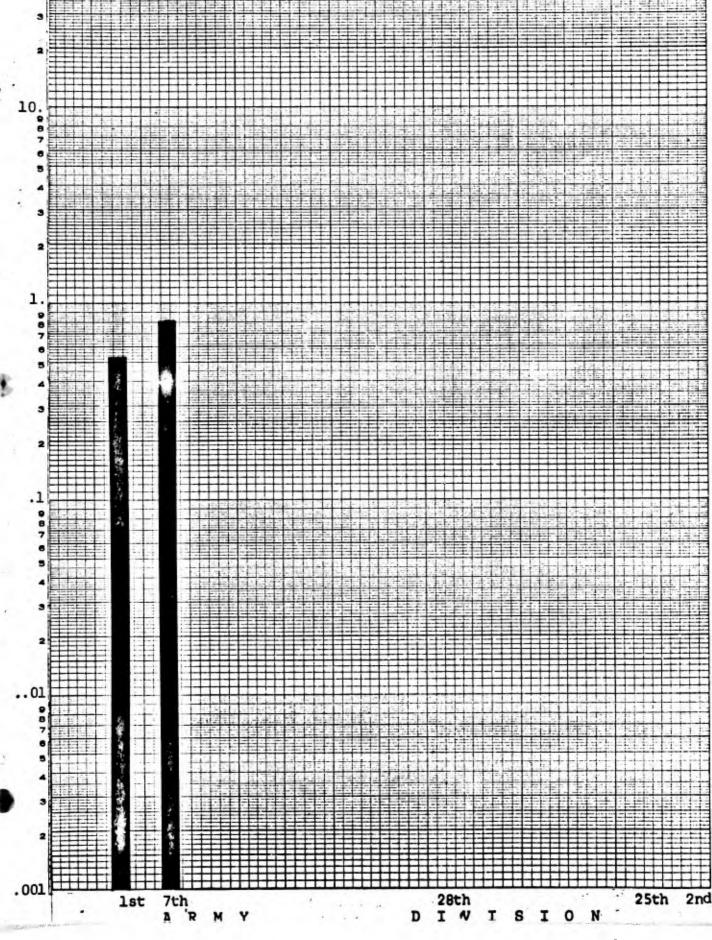
Rifle, .30. M1903 Series 100. Attack -- Loss Per 100 Casualties 2 .01 987 0 1st 45th\* 28th 45th\*\* 7th 96th 25th \* .001 Italy 7th 5th : A R M Y 10th lst wit DIVISION Franc

Rifle, .30, M1903 Series Defense -- Loss Per 1000 Man-Days 10. 7 9 5 .01 8 .001 5 .0001 25th 45th\* 28th D I V I S I O N 7th ARMY Ital

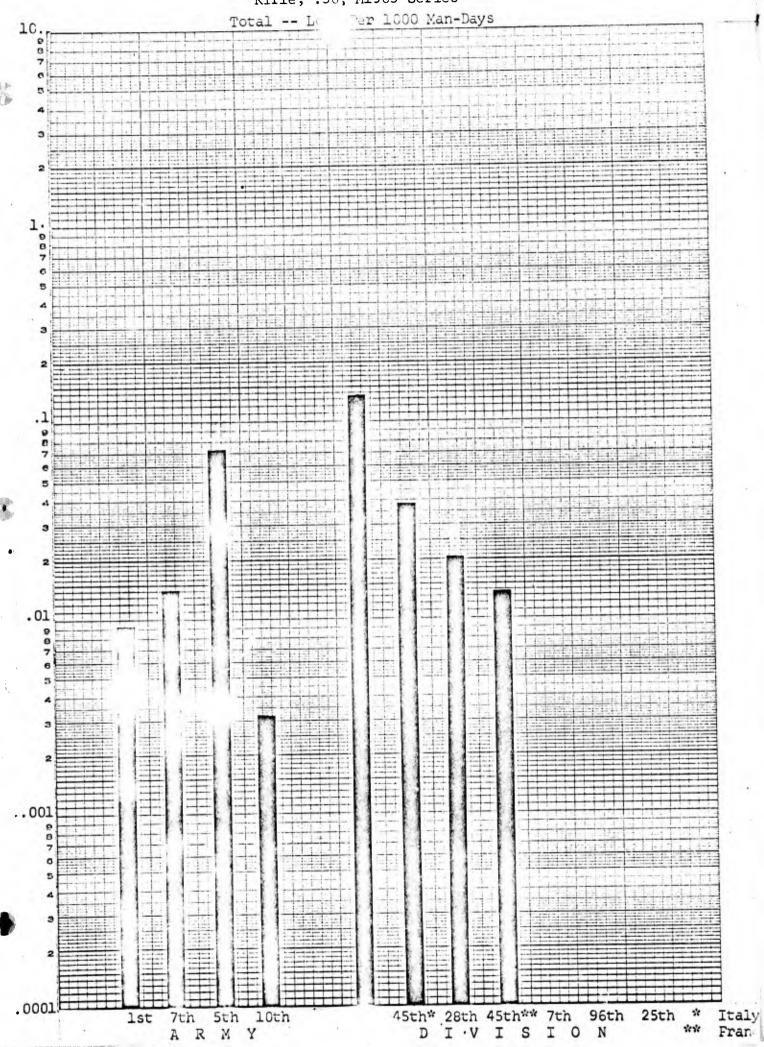


Rifle, .30, M1903 Series Withdrawal -- Loss Per 1000 Man-Days 9 .01 1 . . 001 .0001 28th lst ISION D ARMY

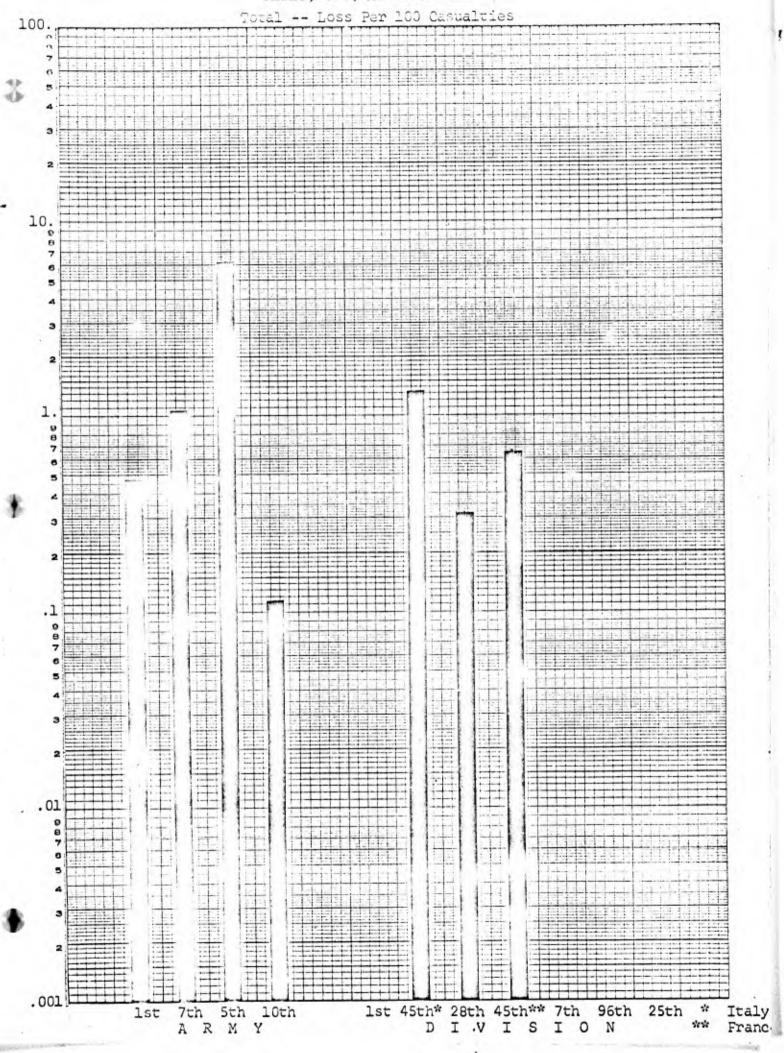
Rifle, .30, M1903 Series Withdrawal -- Loss Per 100 Casualties 

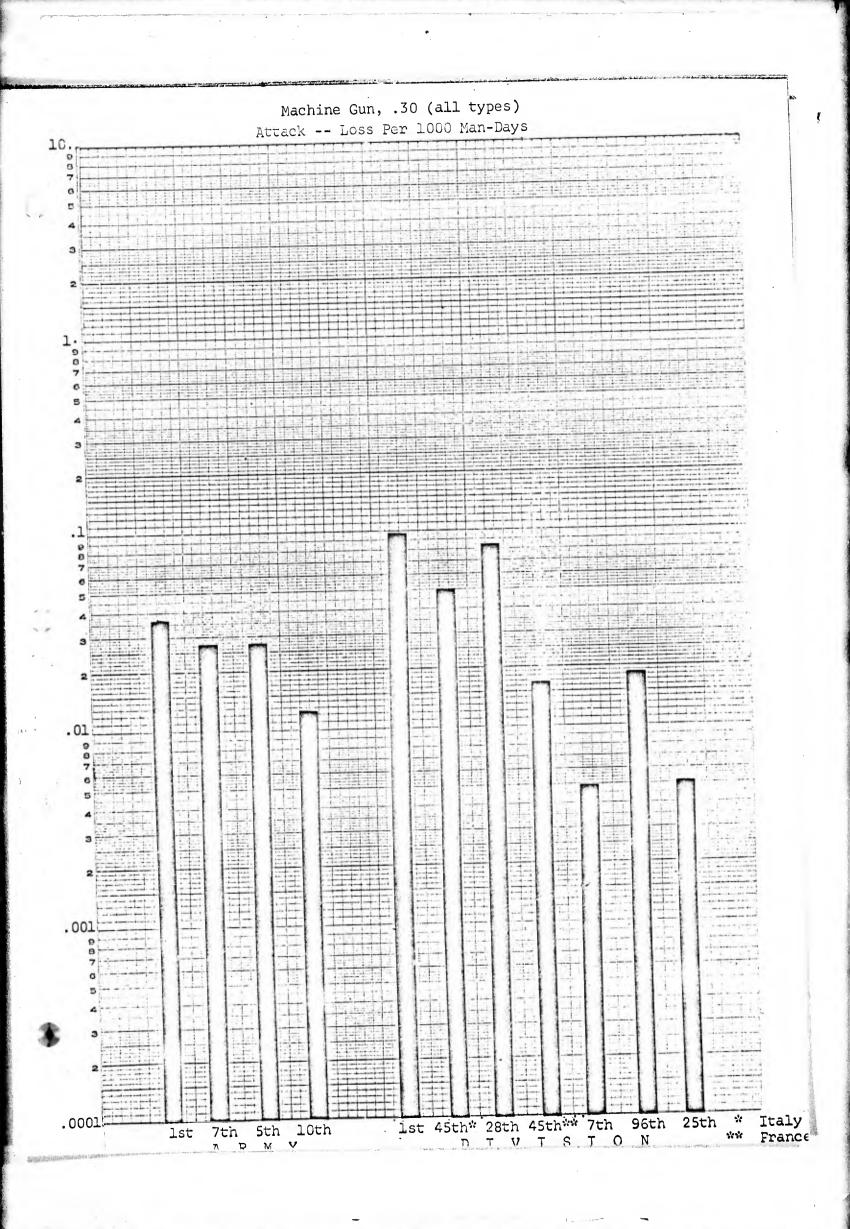


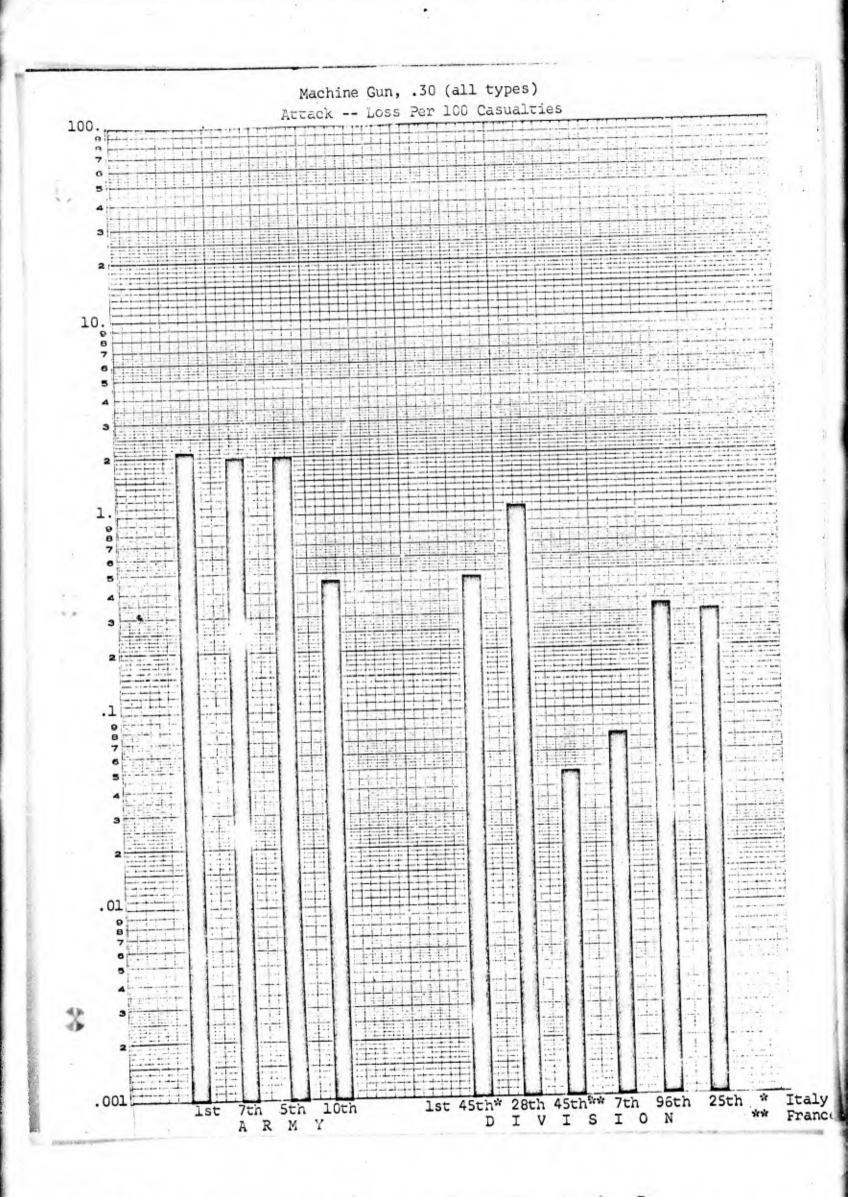
Rifle, .30, M1903 Series

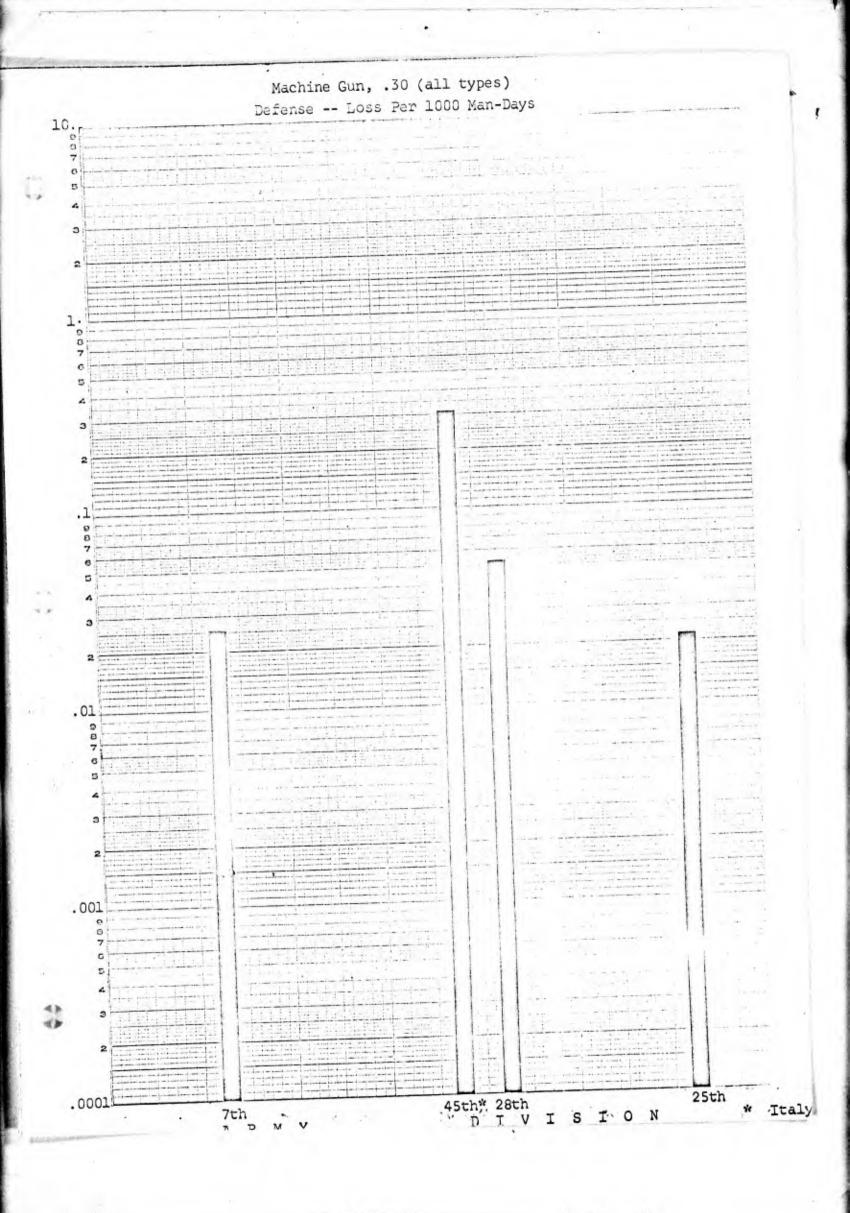


Rifle, .30, M1903 Series



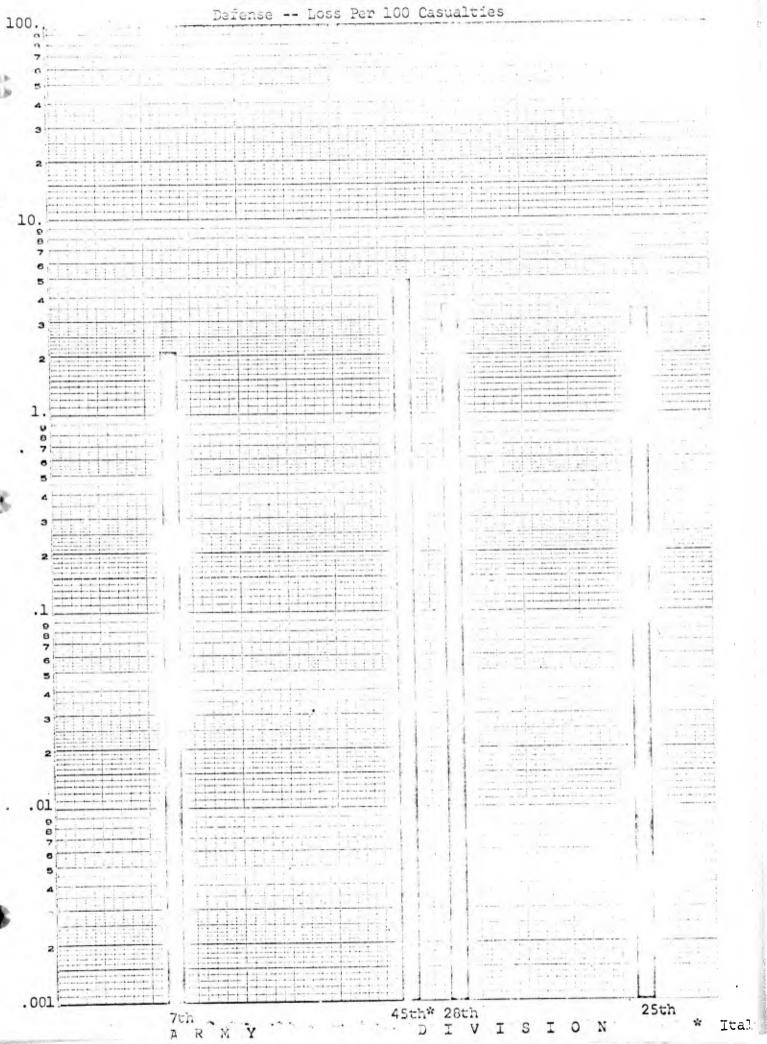




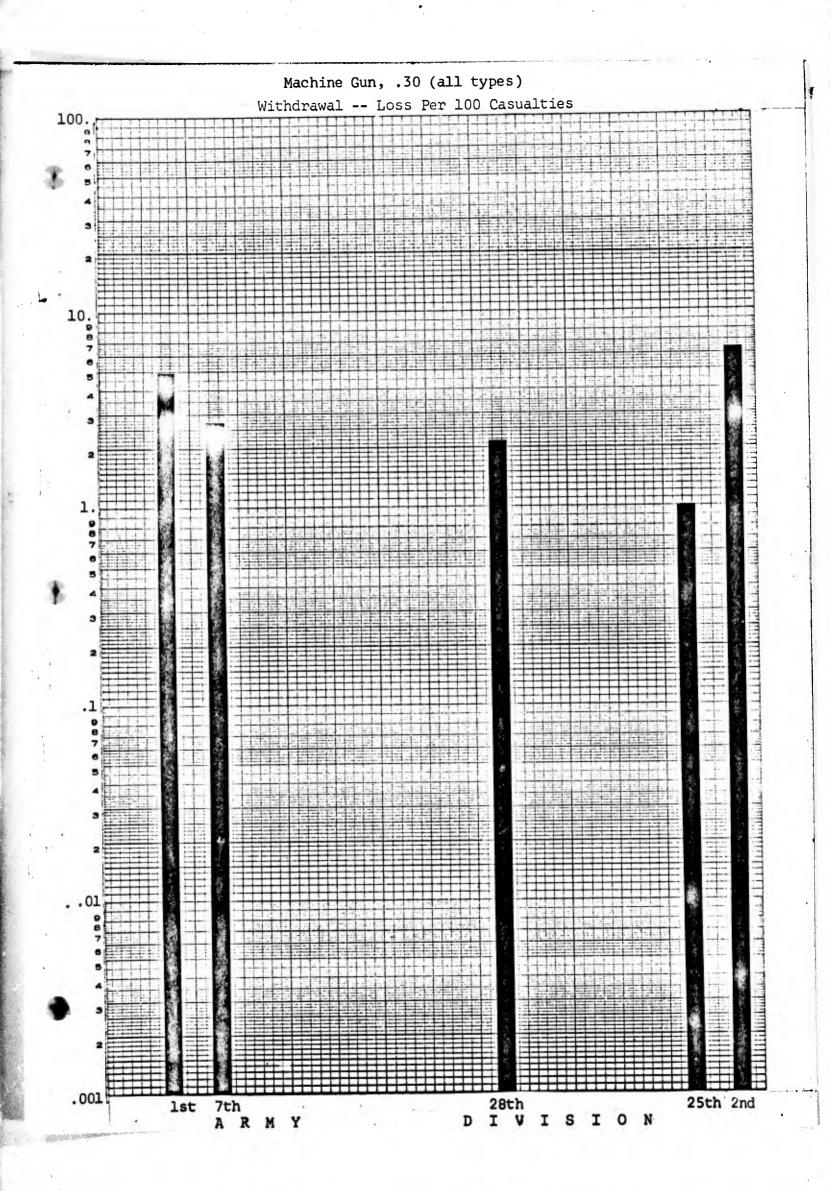


Machine Gun, .30 (all types)

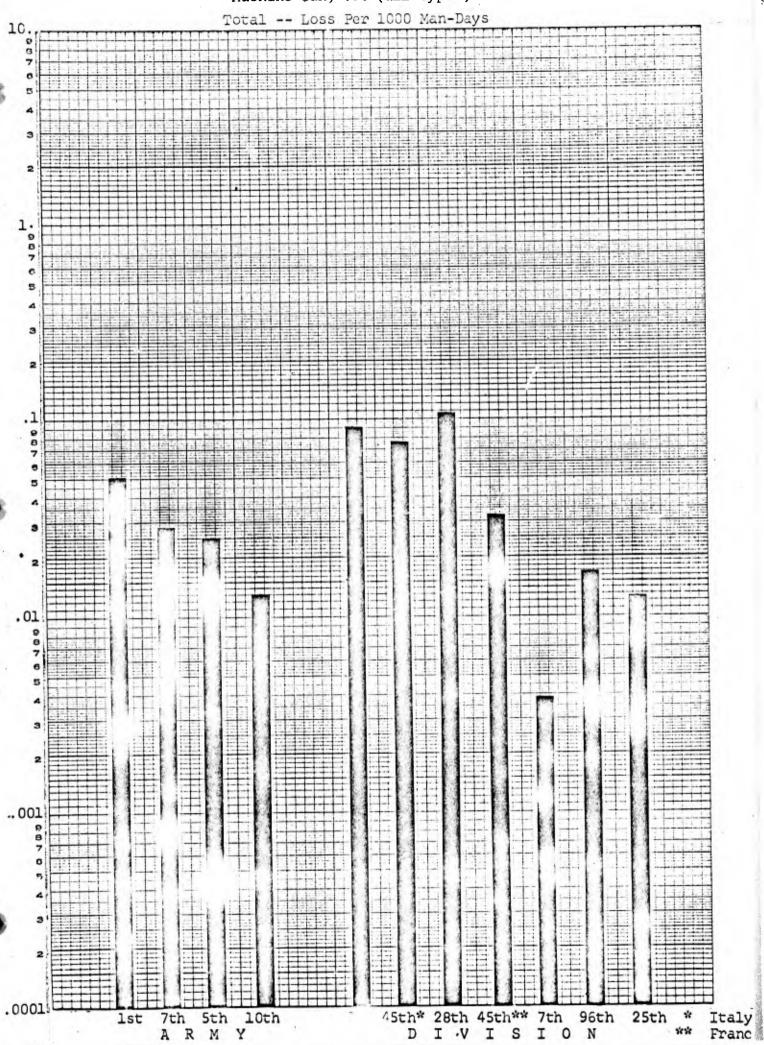
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Machine Gun, .30 (all types) 10. Withdrawal -- Loss Per 1000 Man-Days 8 01 ..001 .0001 25th 2nd 28th 7th lst DIVISION ARMY



Machine Gun, .30 (all types)



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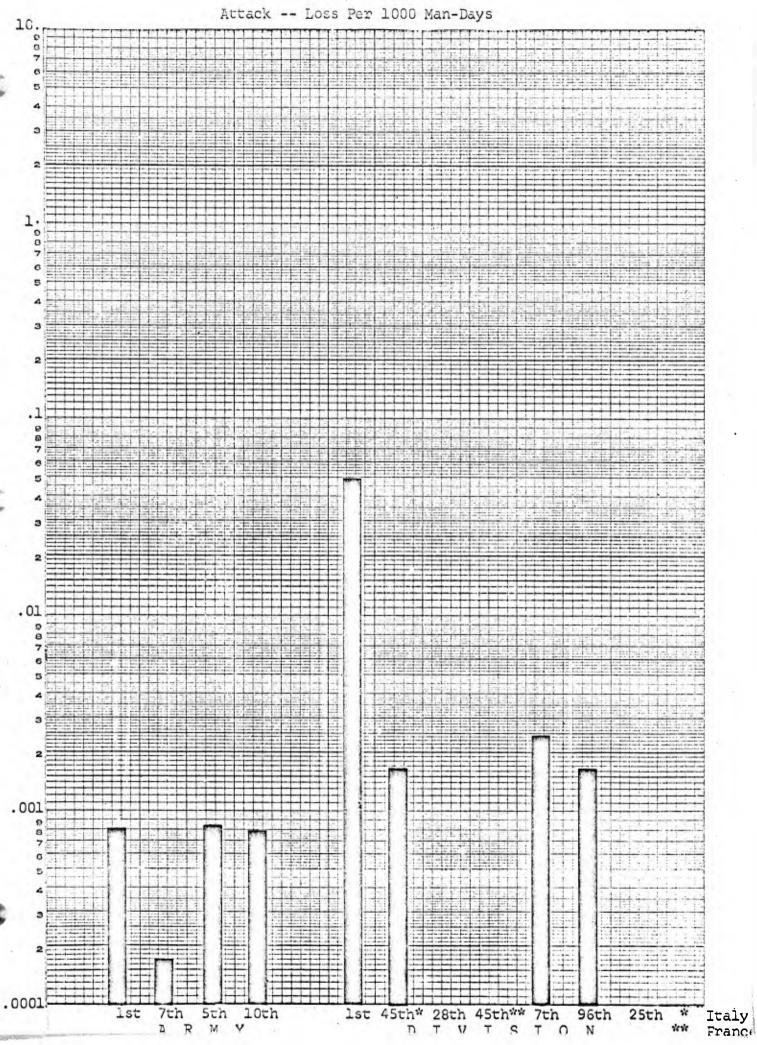
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Howitzer, 105 mm



Howitzer, 105 mm Attack -- Loss Per 100 Casualties 100. 10. 3 01 987 H .001 1st 45th\* 28th 45th\*\* Italy 7th Soth 10th 7th 5th lst \*\* France S I O I N IV ARM Y

Howitzer, 105 mm Defense -- Loss Per 1000 Man-Days 10. 007 9 0 7 887 6 5 .01 90 5 .001 9 8 7 G .0001 45th\* 28th D I V I S I O N 7th . A R M Y Italy

Howitzer, 105 mm Defense -- Loss Per 100 Casualties 100.,. α -0 10. 8 .01 7th

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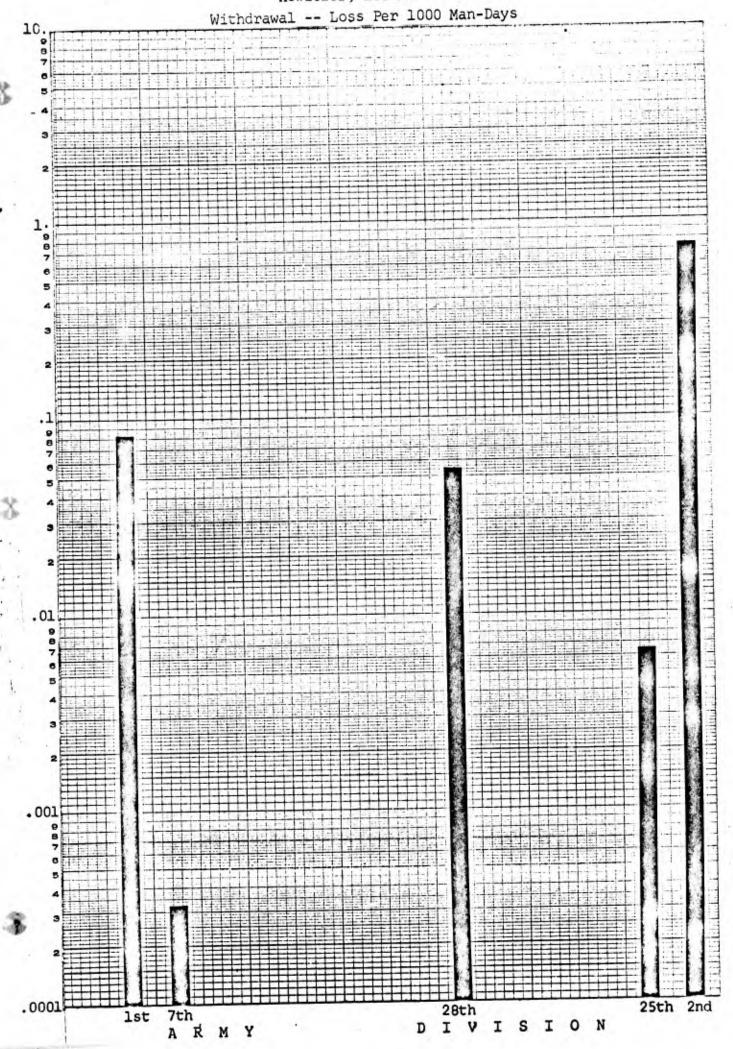
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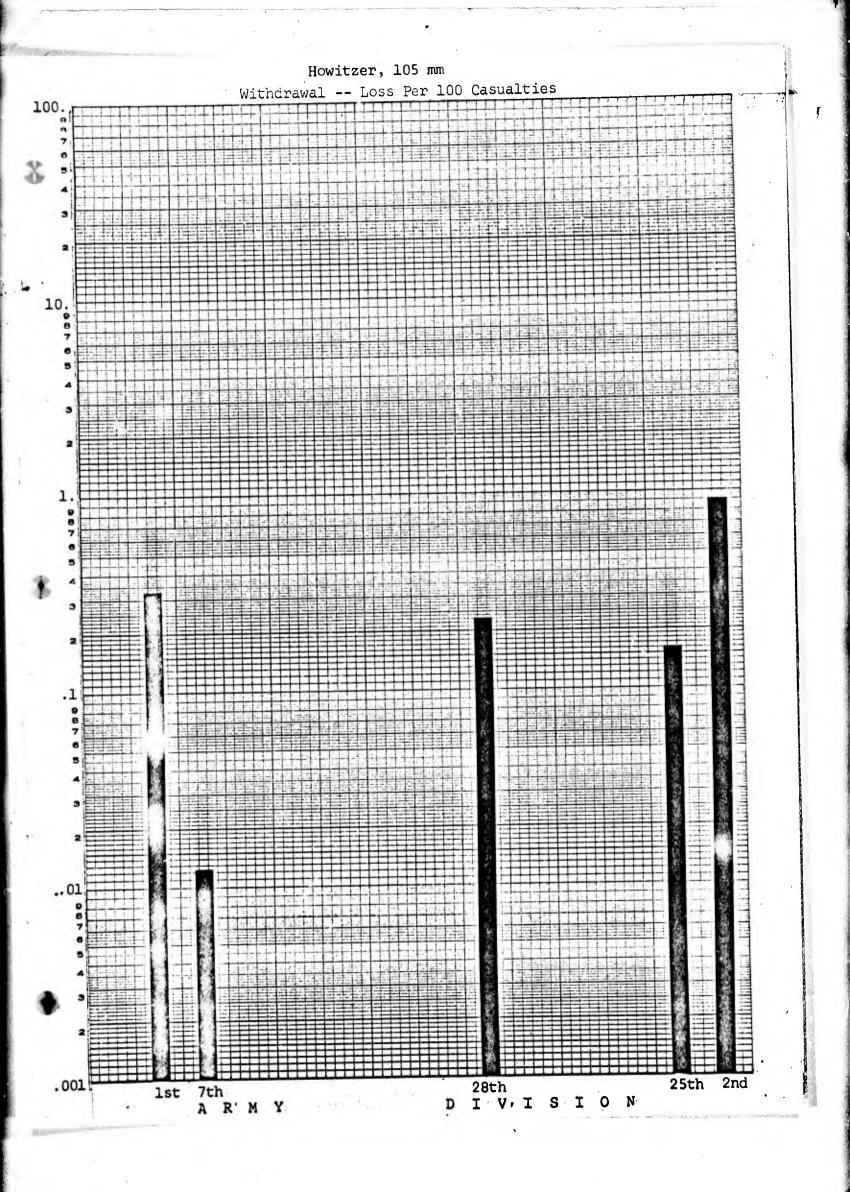
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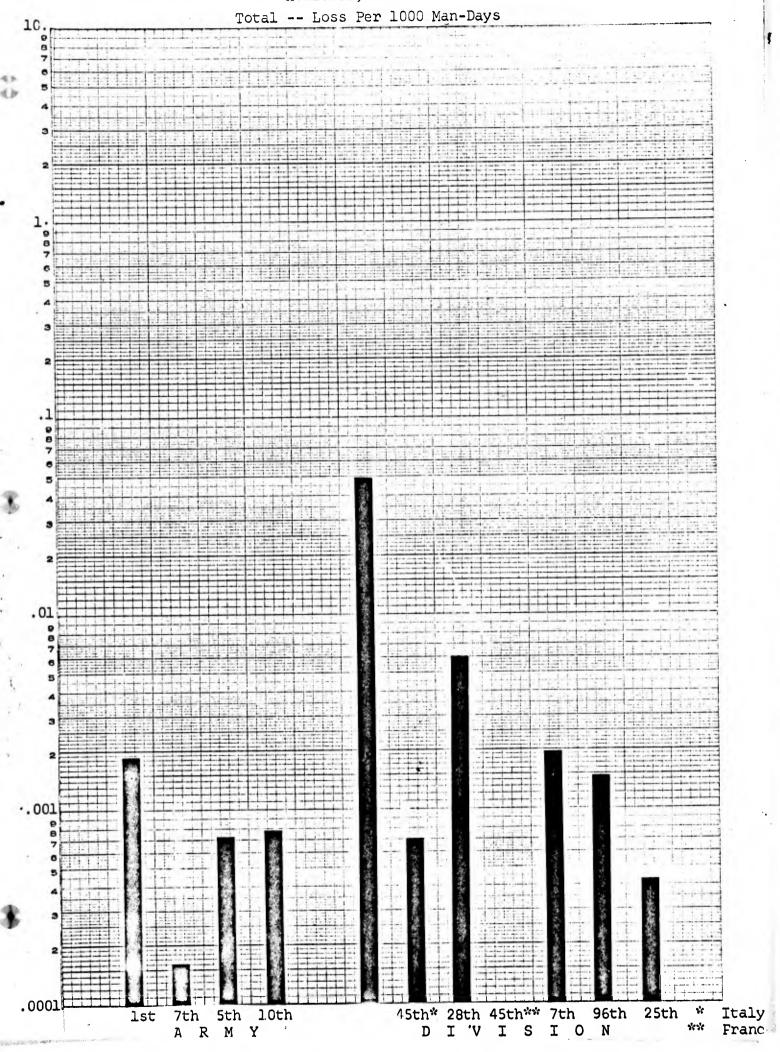
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Howitzer, 105 mm







Howitzer, 105 mm Total -- Loss Per 100 Casualties 100. 10. 987 01 8 7 1 .

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Howitzer, 155 mm Attack -- Loss Per 1000 Man-Days 10. 0 5 2 9 2 .01 .001 9 2 .0001 lst 45th\* 28th 45th\*\* 7th Italy 96th 5th 10th 7th lst Franc DIVISION V D M

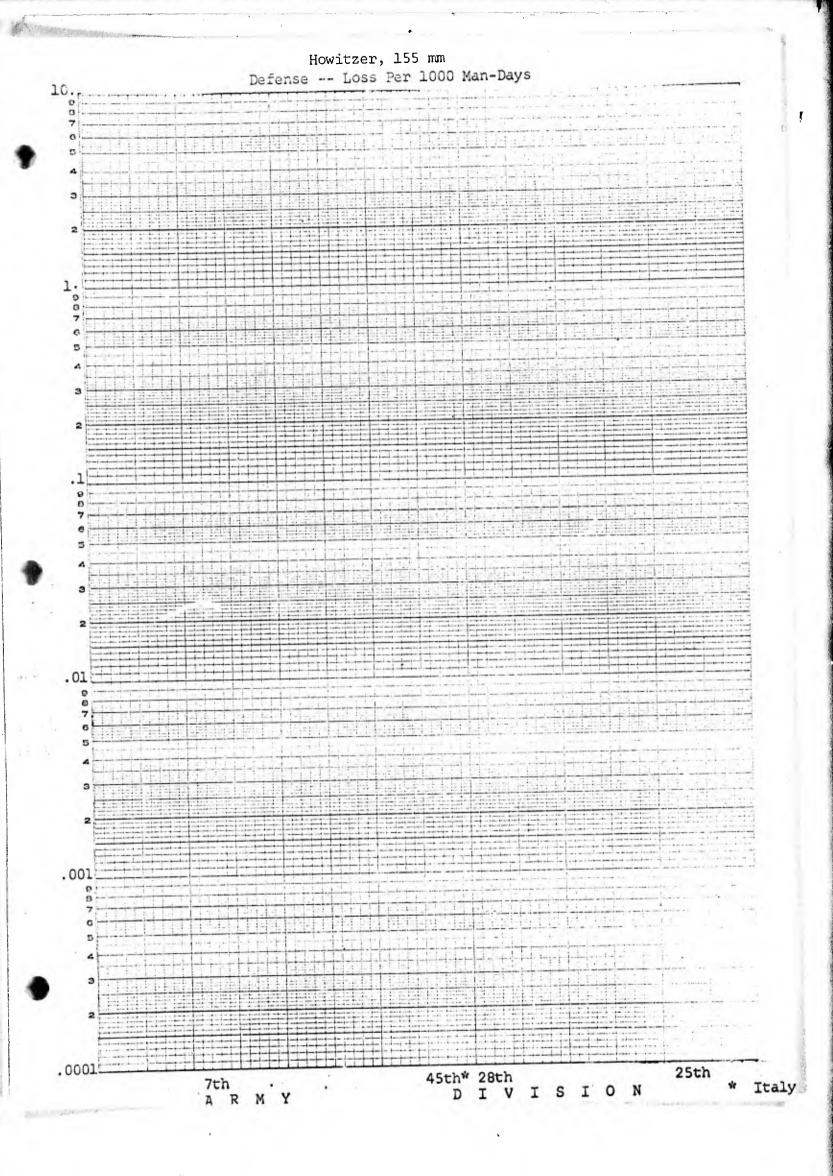
Howitzer, 155 mm Attack -- Loss Per 100 Casualties 100. 5 10. 2 1. .1 .01 0 1

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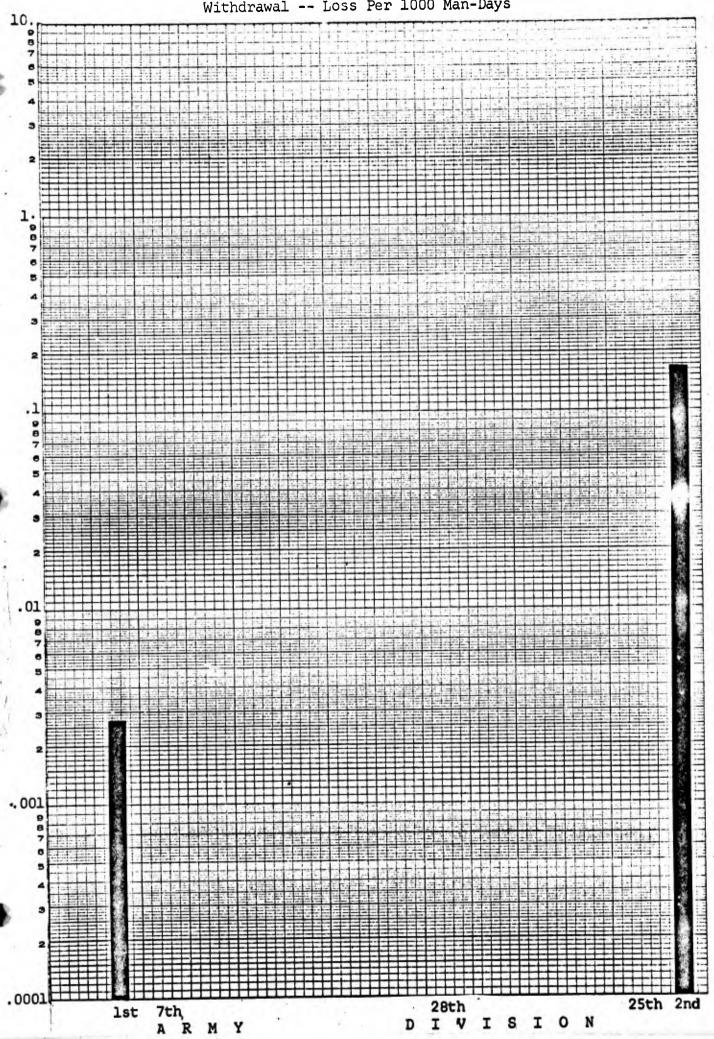
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Howitzer, 155 mm

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Howitzer, 155 mm
Withdrawal -- Loss Per 1000 Man-Days



Howitzer 155 mm Withdrawal -- Loss Per 100 Casualties 100. 10. 2 .1 9 8 7 .01 25th .001 28th 7th lst ISION I D ARMY

Howitzer, 155 mm Total -- Loss Per 1000 Man-Days 10. 1. .01 9 .001 7 1

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Howitzer, 155 mm Total -- Loss Per 100 Casualties 100: 2 10. 7 2 9 6 al distant .01 9 4 

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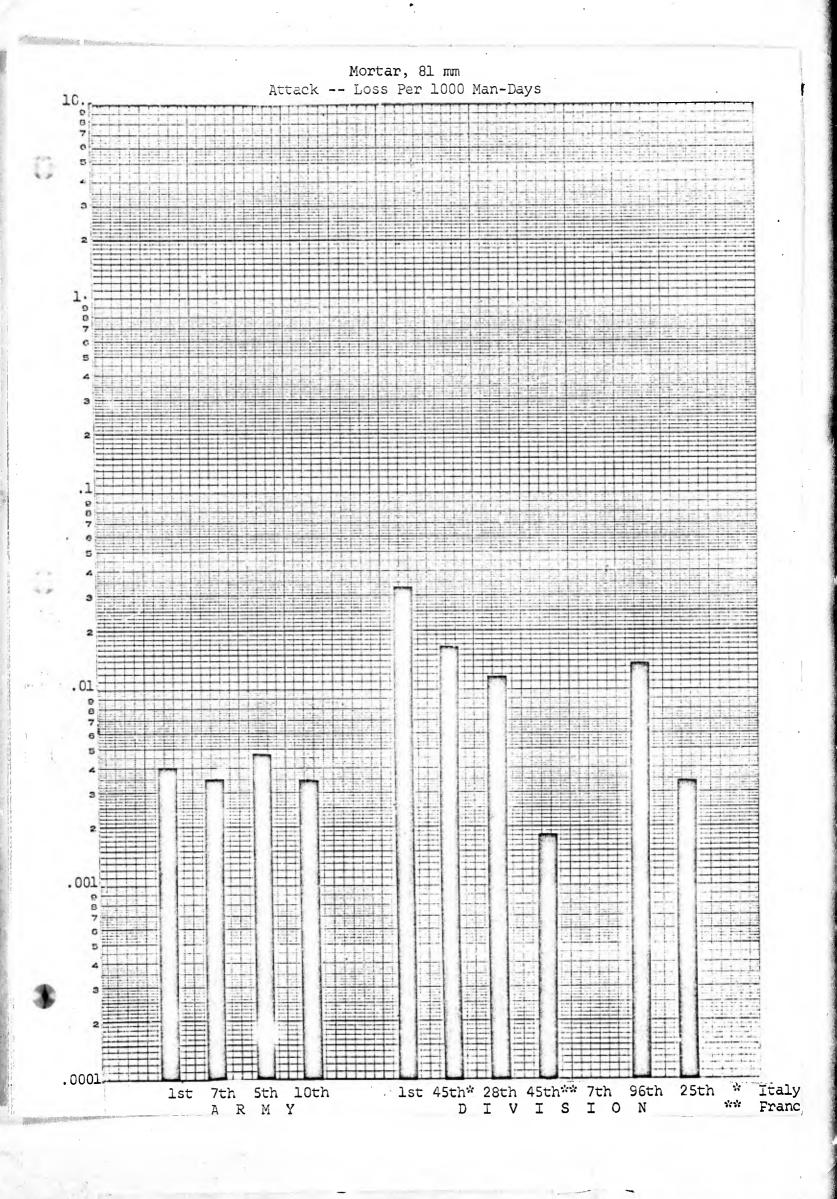
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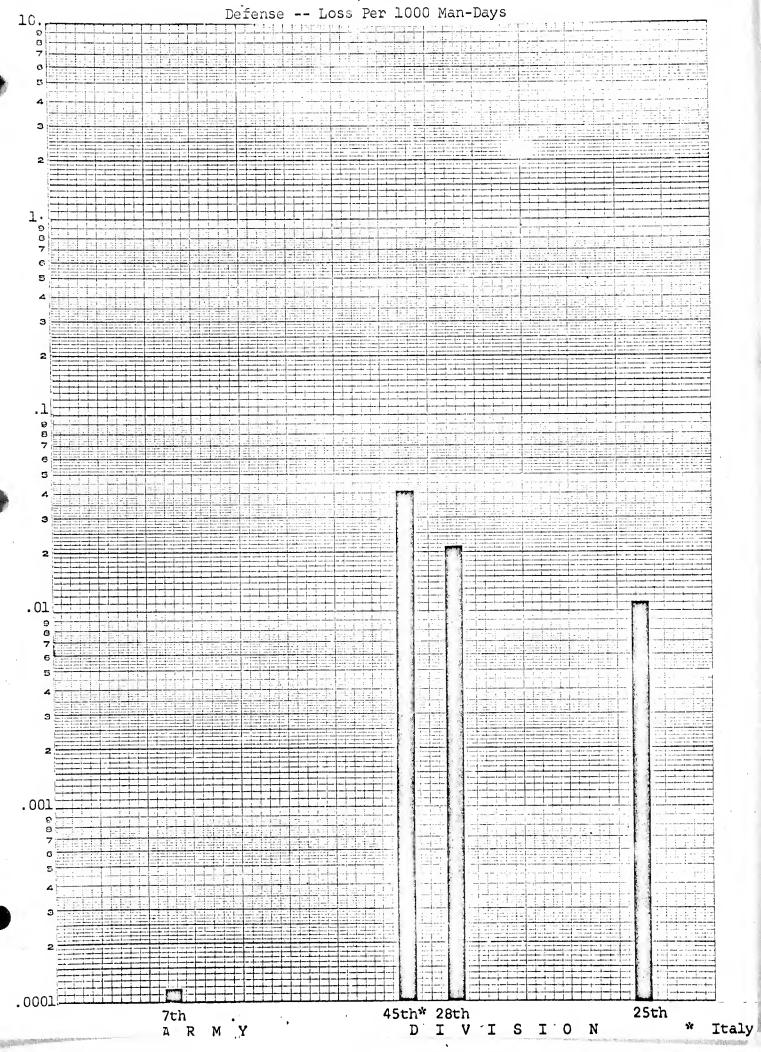
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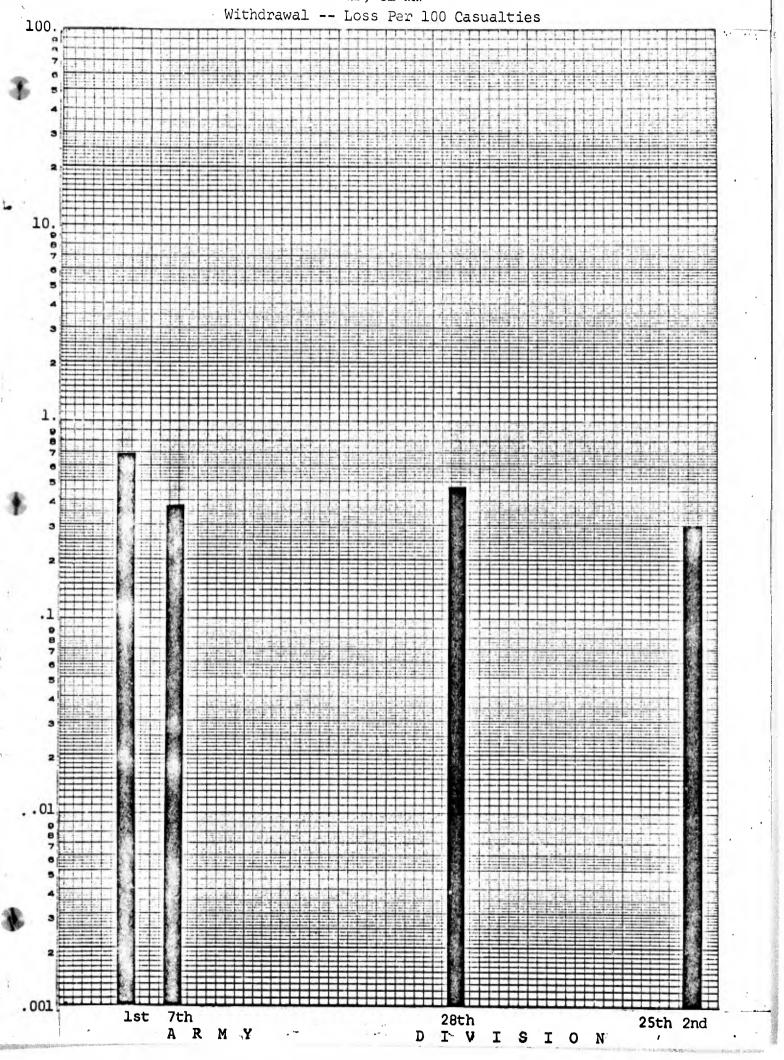
7th 5th 10th 1st 45th\* 28th 45th\*\* 7th 96th 25th \*

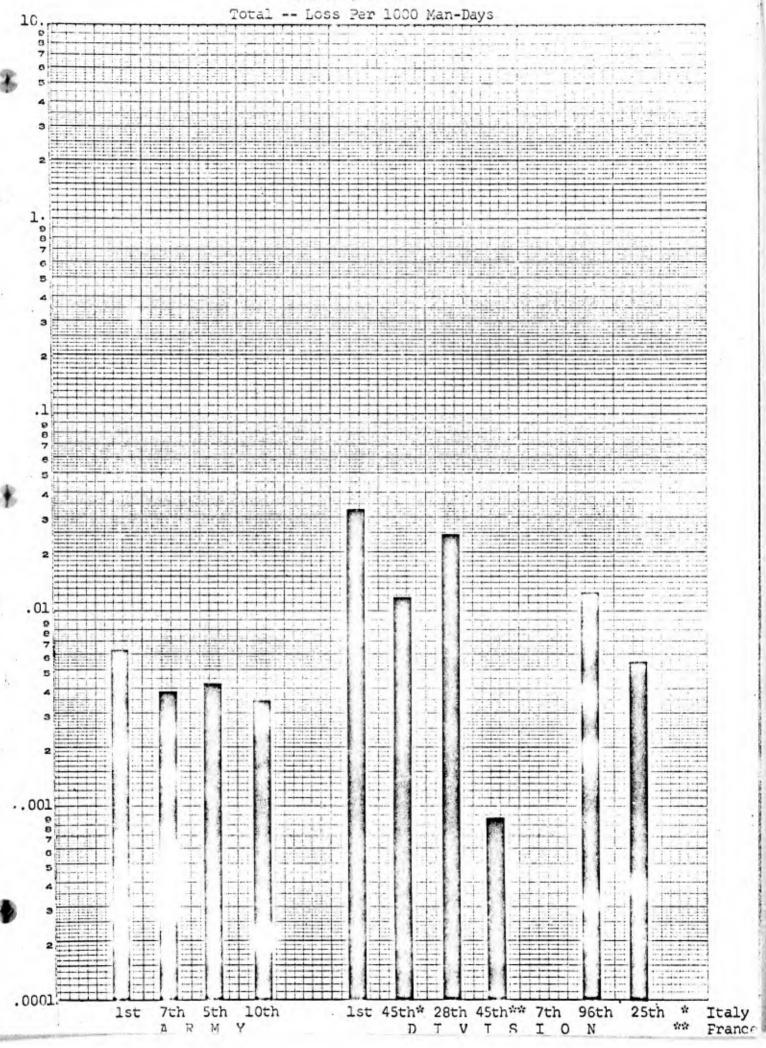




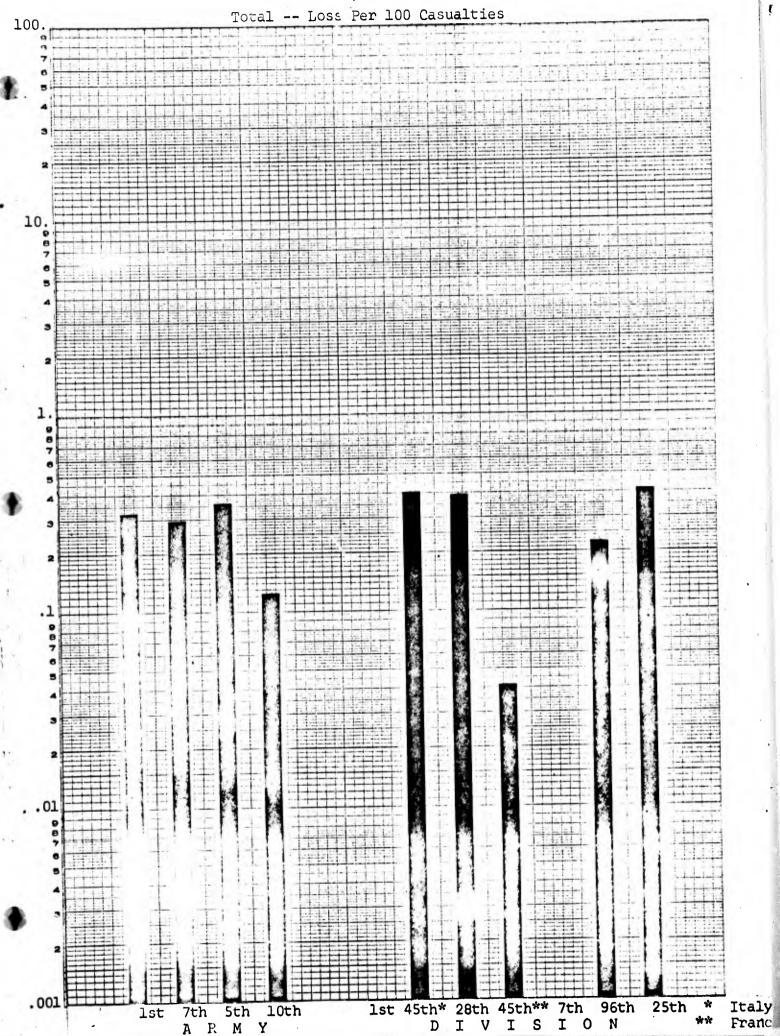
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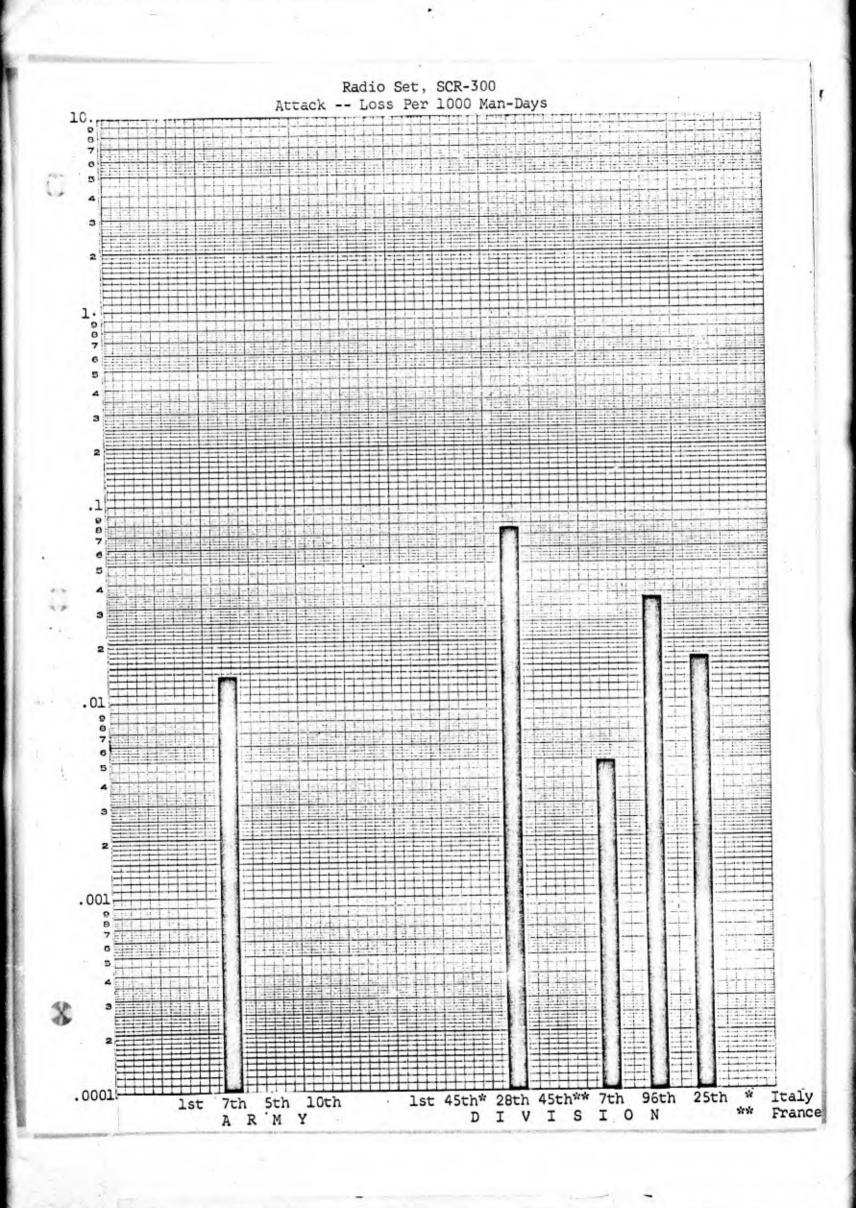
Mortar, 81 mm Withdrawal -- Loss Per 1000 Man-Days 10 .01 ..001 . 25th 2nd 28th lst 7th DINISION A'R M Y

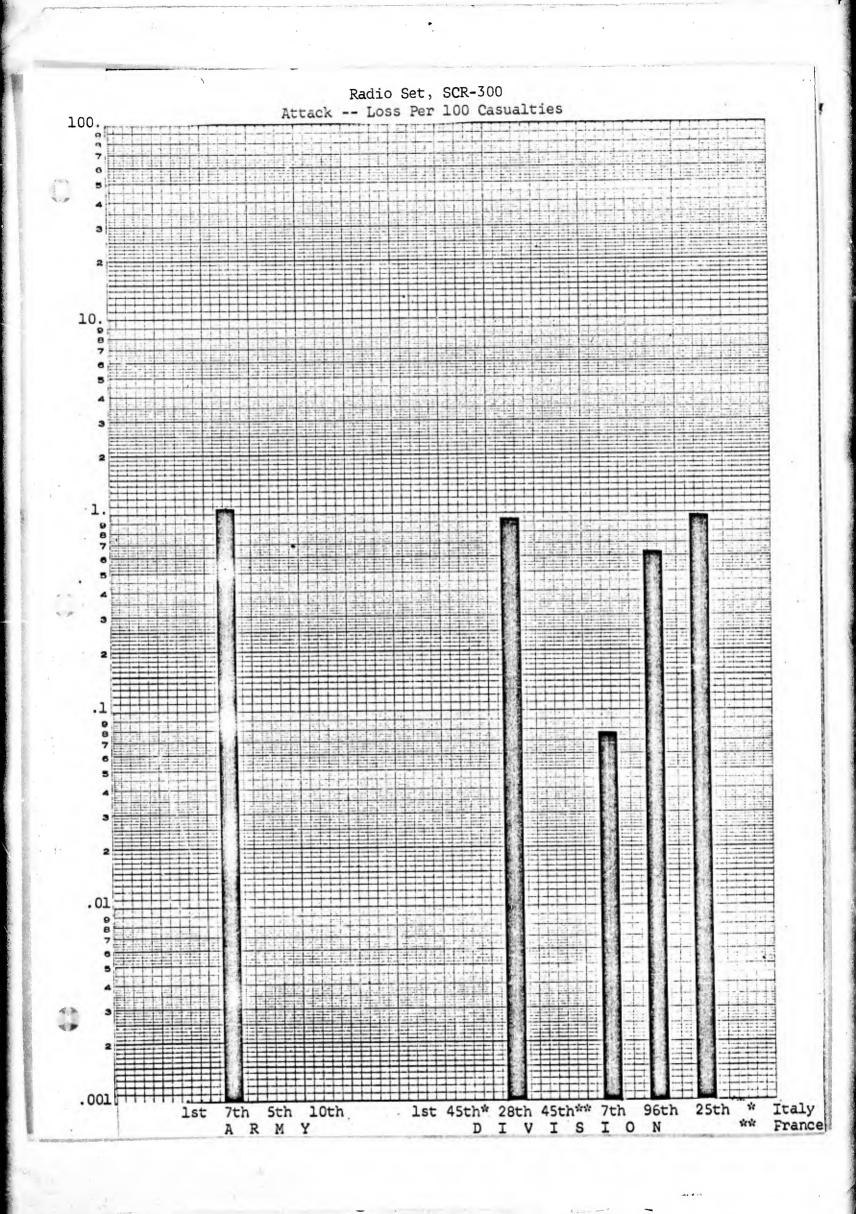




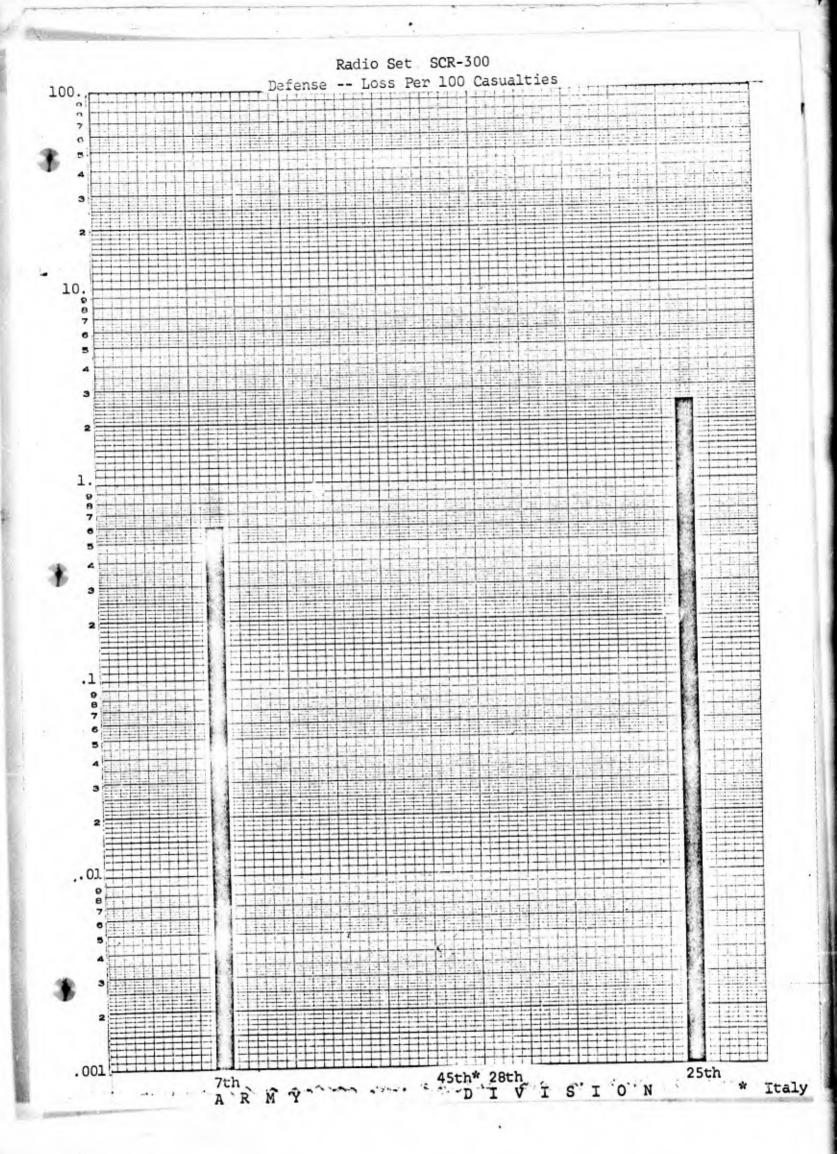
Mortar, 81 mm

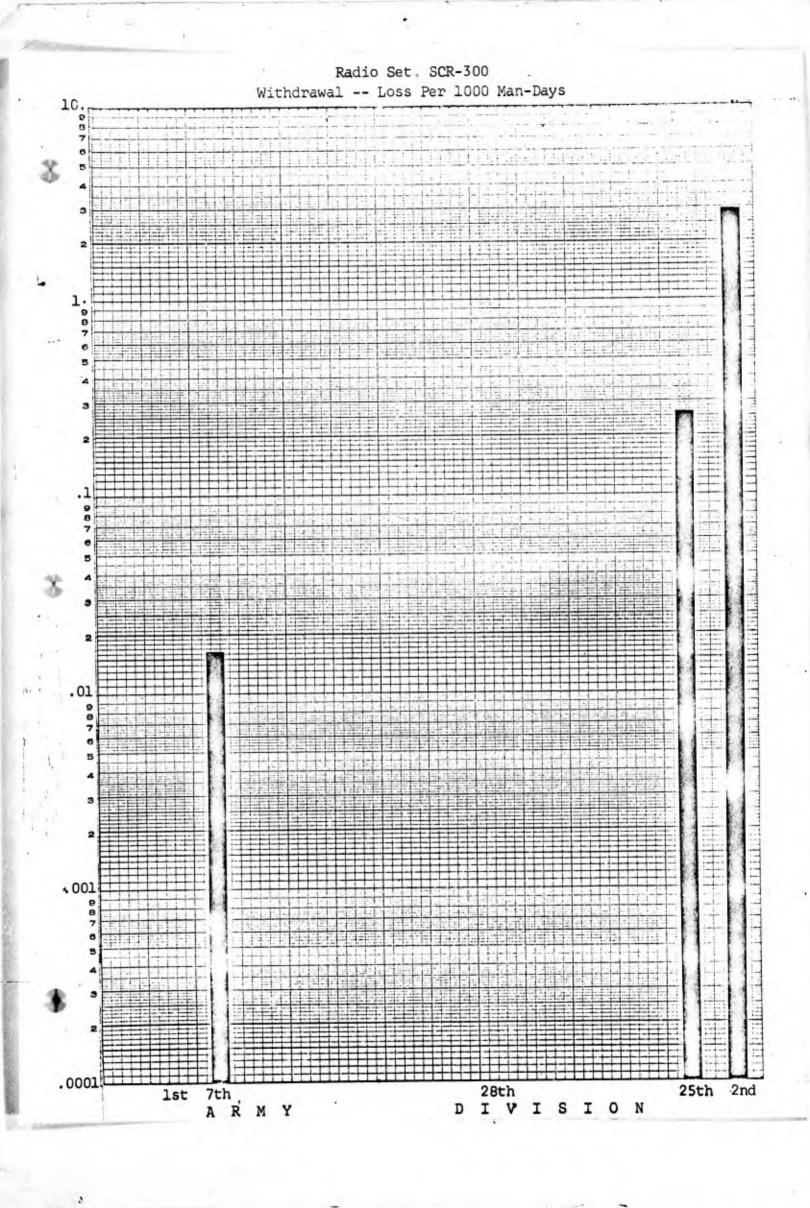






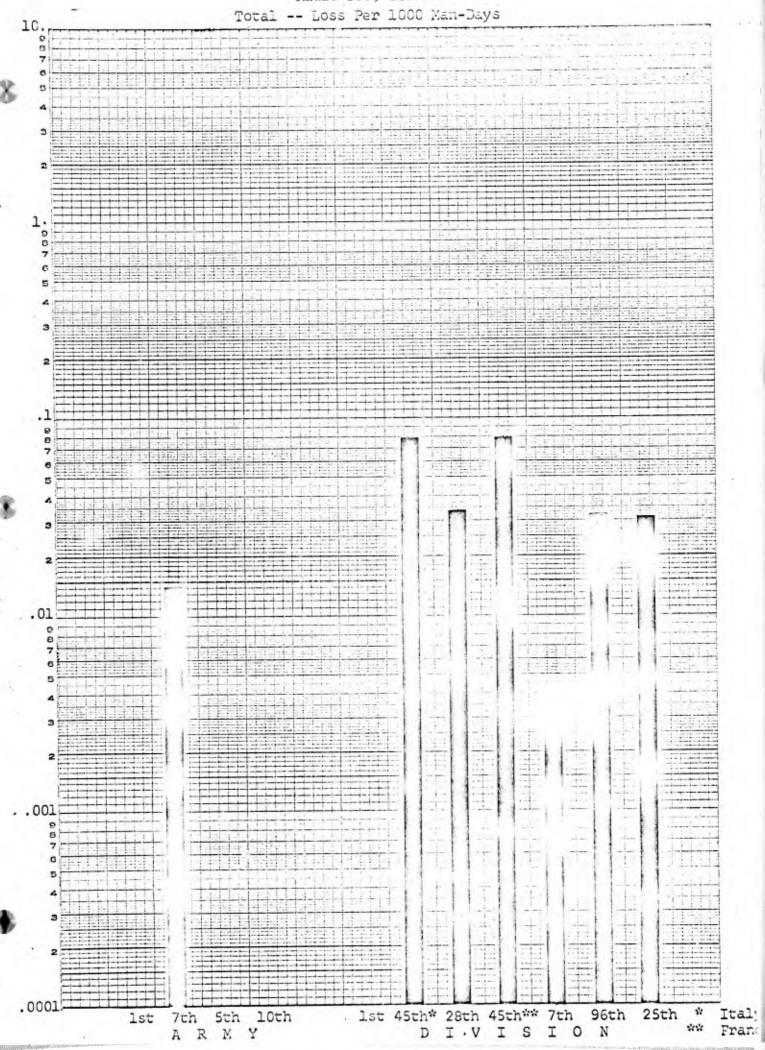
Radio Set, SCR-3.00 Defense -- Loss Per 1000 Man-Days 10. 0 0 7 .1 .01 9 .001 9 9 7 6 5 .0001 25th 45th\* 28th 7th A R M Y Italy DIVISION



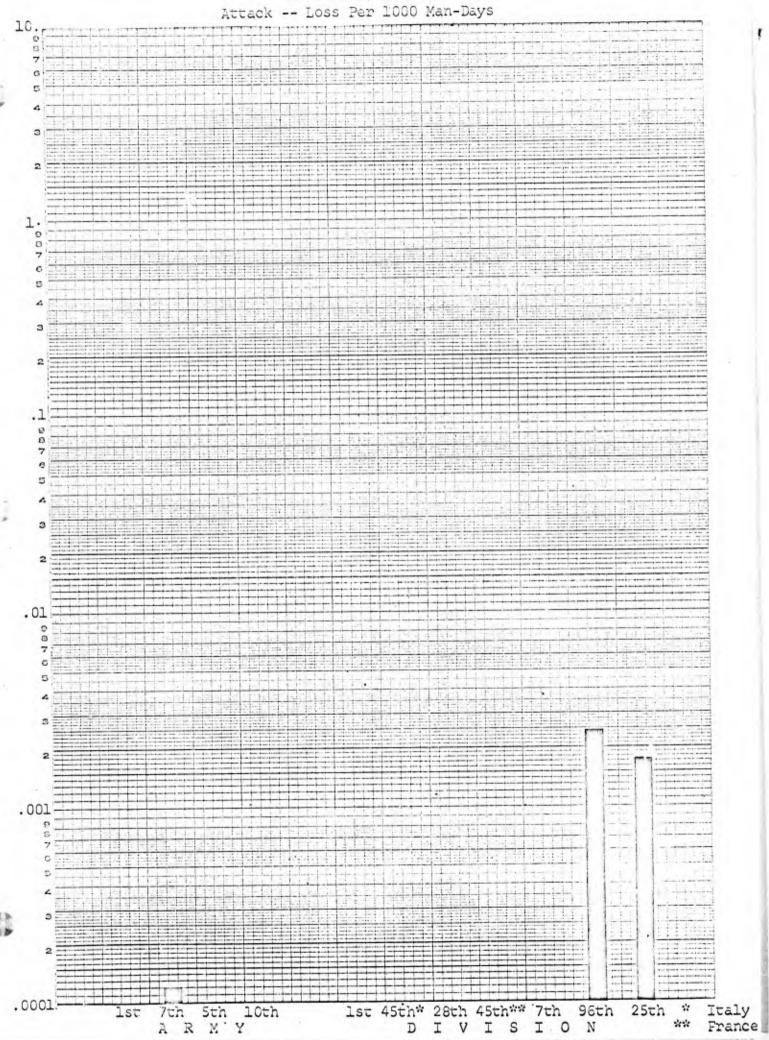


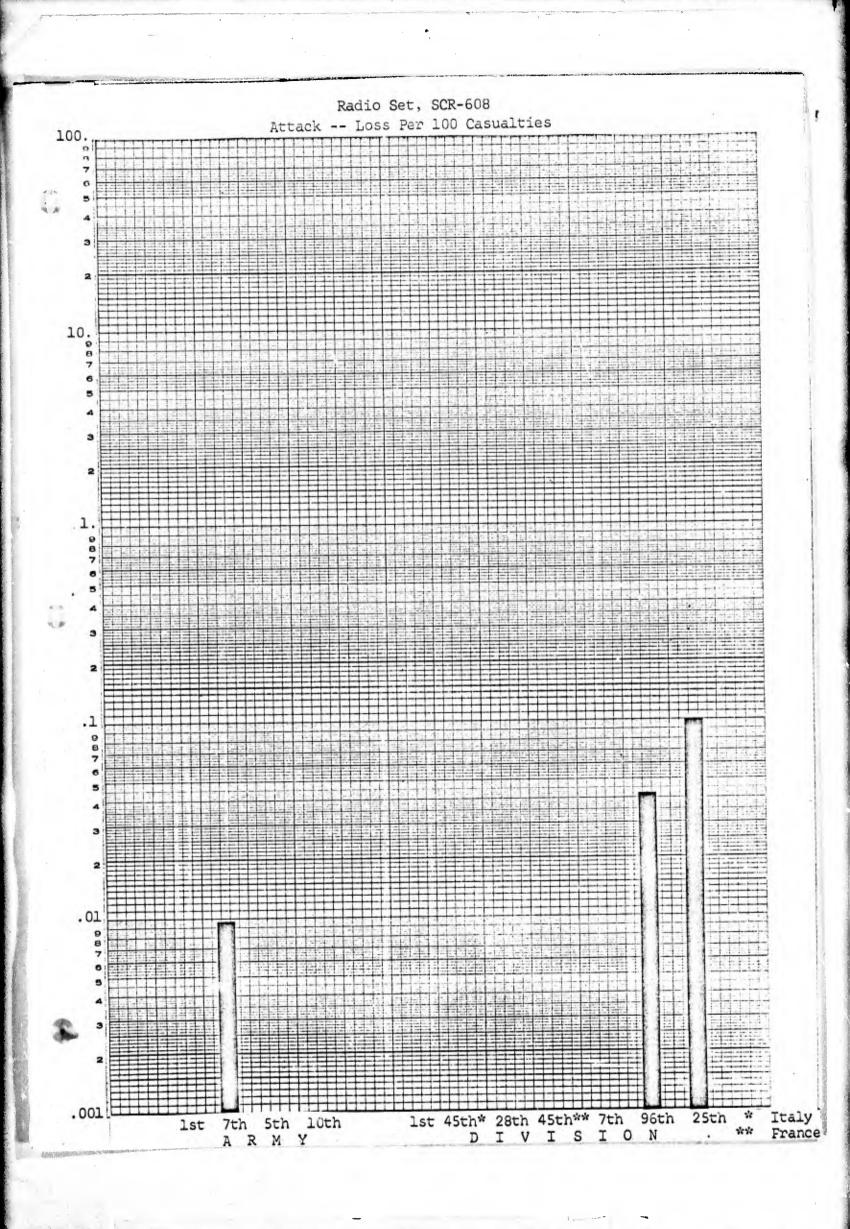
Radio Set, SCR-300 Withdrawal -- Loss Per 100 Casualties 100. 7 1114 10, 8 7 6 2 1. 9 14. .1 5 3 01 4 3 28th lst 7th DIVISION ARMY

Radio Set, SCR-300



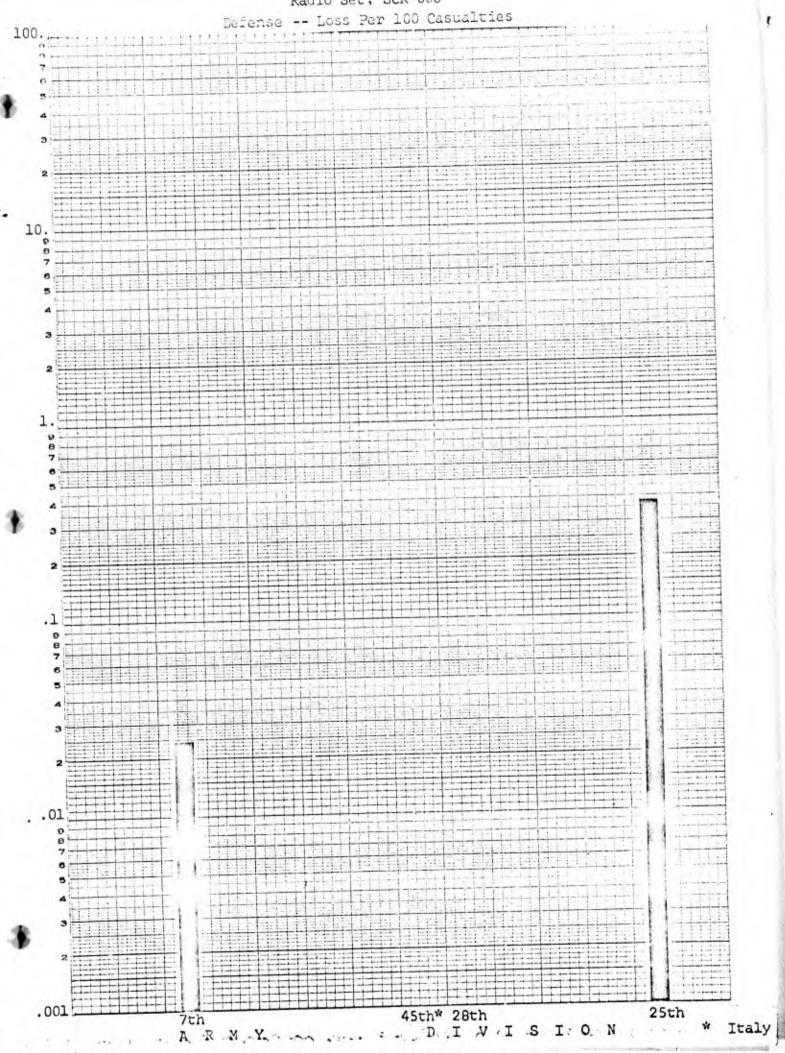
Radio Set SCR-300 Total -- Loss Per 100 Casualties 100. 10. . .01 9 8 7 . 5th 10th 25th \* 1st 45th\* 28th 45th\*\* 7th 96th Italy ARMY I S · steste IV I O N D France Radio Set, SCR-608





Radio Set, SCR-608 Defense -- Loss Per 1000 Man-Days 10. .01 .001 25th, 45th\* 28th 7th R M

Radio Set, SCR-608



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Radio Set, SCR-608 Withdrawal -- Loss Per 100 Casualties 100., 10. .1 9 8 7 .01

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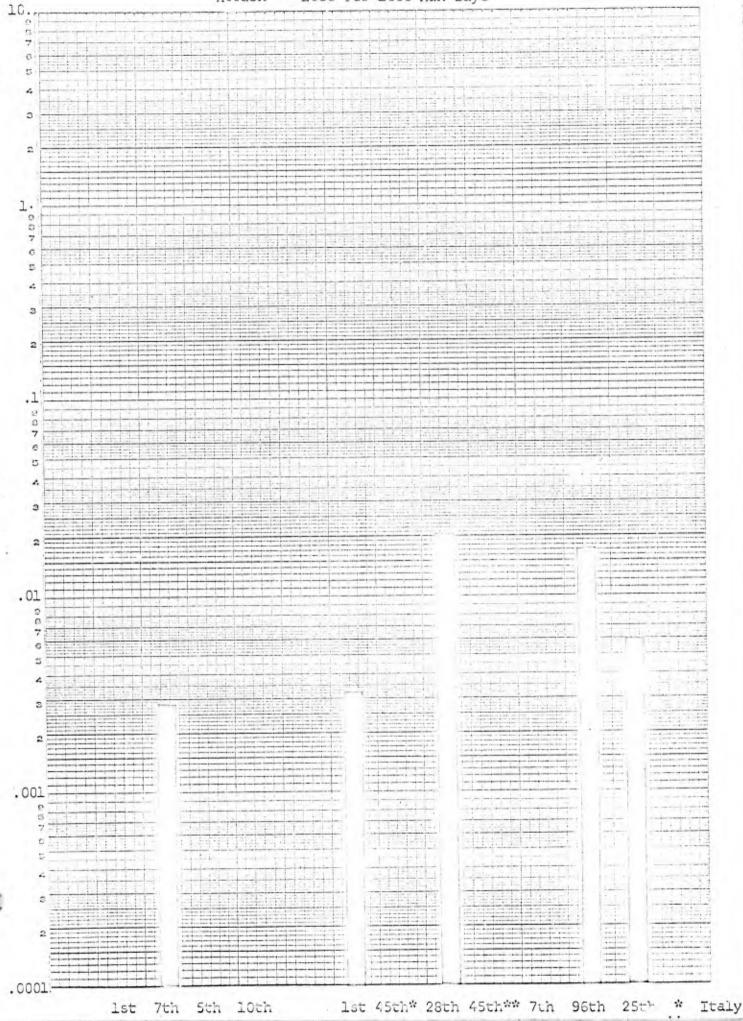
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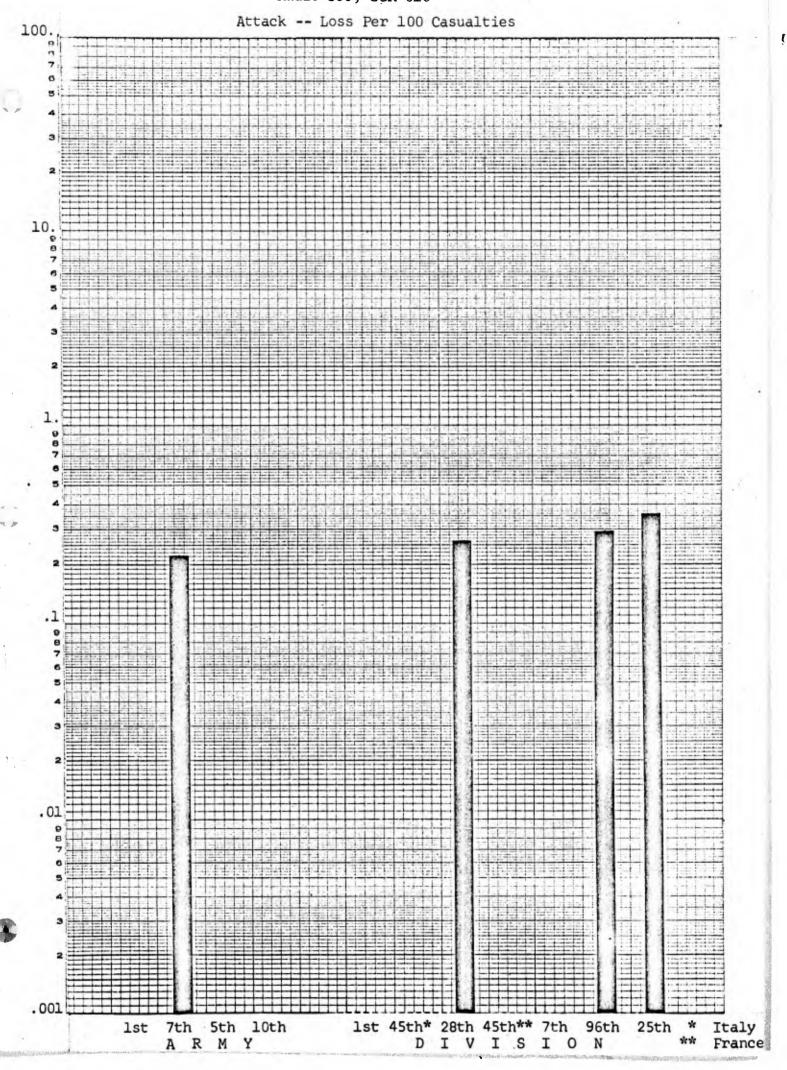
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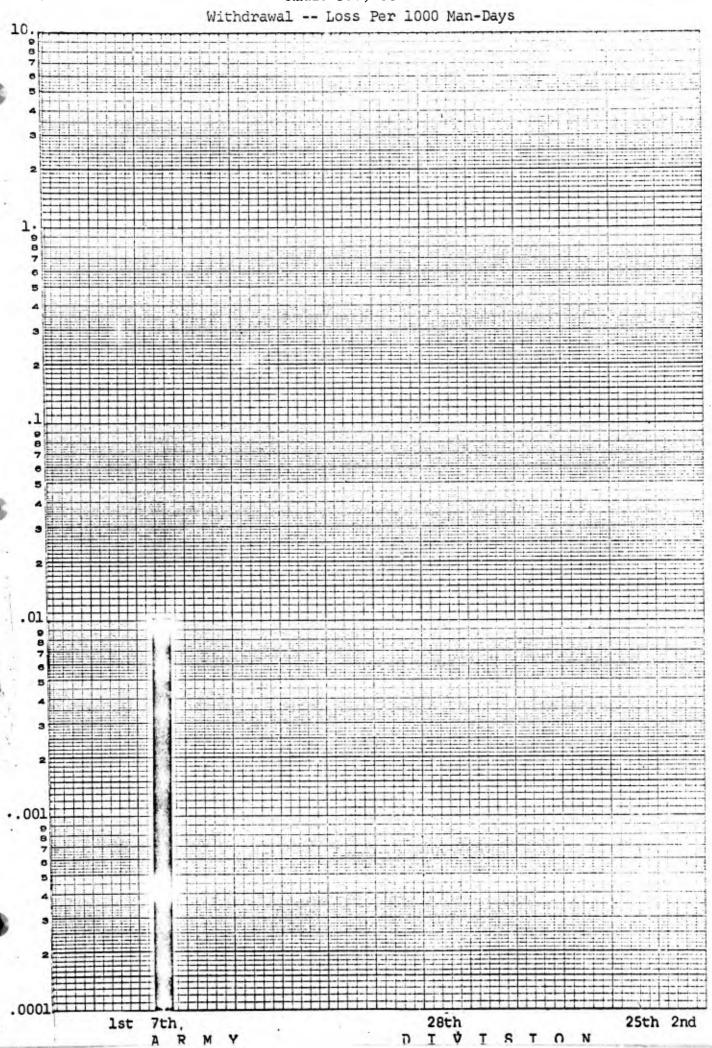
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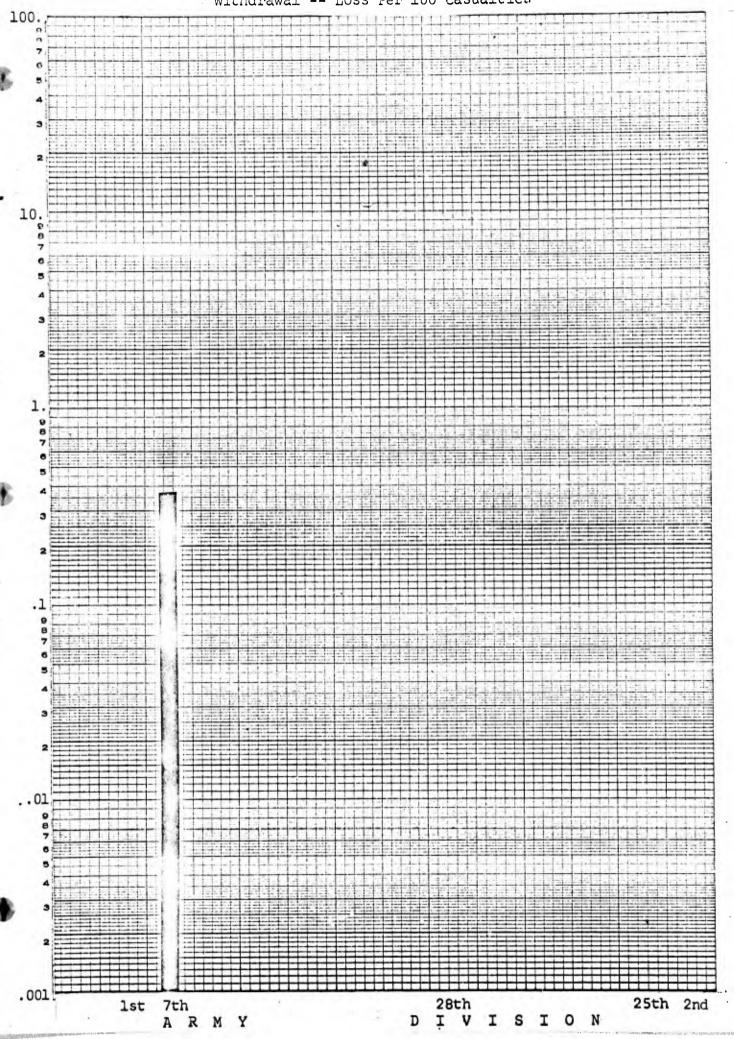
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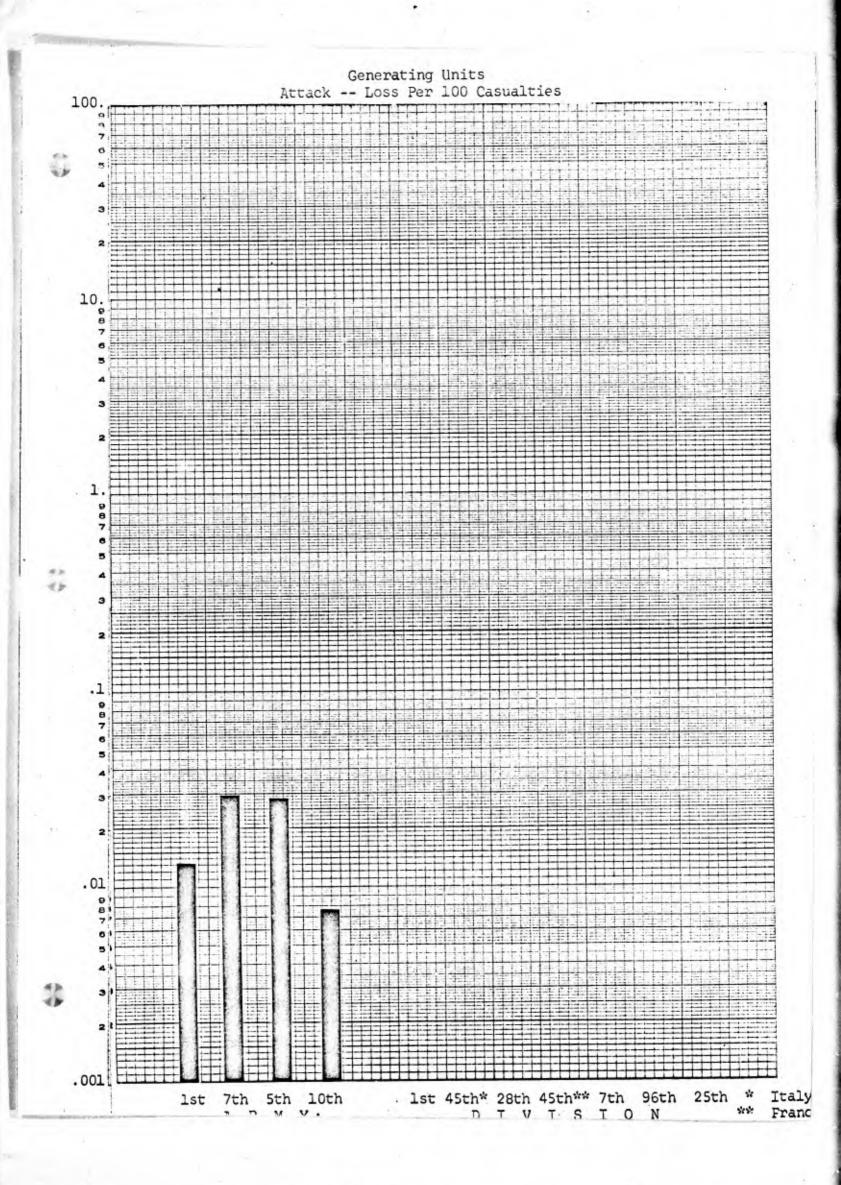


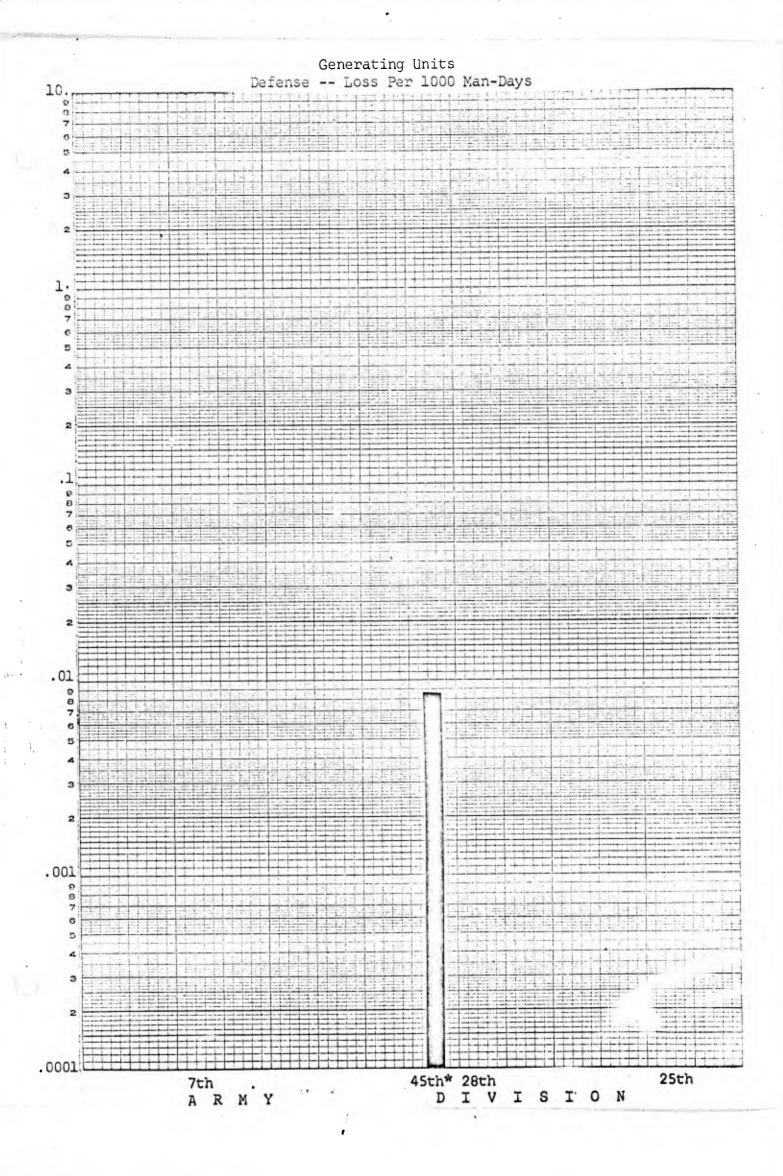
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Radio Set, SCR-610 Total -- Loss Per 100 Casualties 100. 7 10. 9 9 7 6 5 1. 9 Hand. 6 2 9 8 4 7 6 5 01 .01 5 7-4-1-6-1 4 -2 \* 96th Italy \* 28th 45th\*\* 7th ww Franc .001 7th 5th 10th lst VISION ARMY

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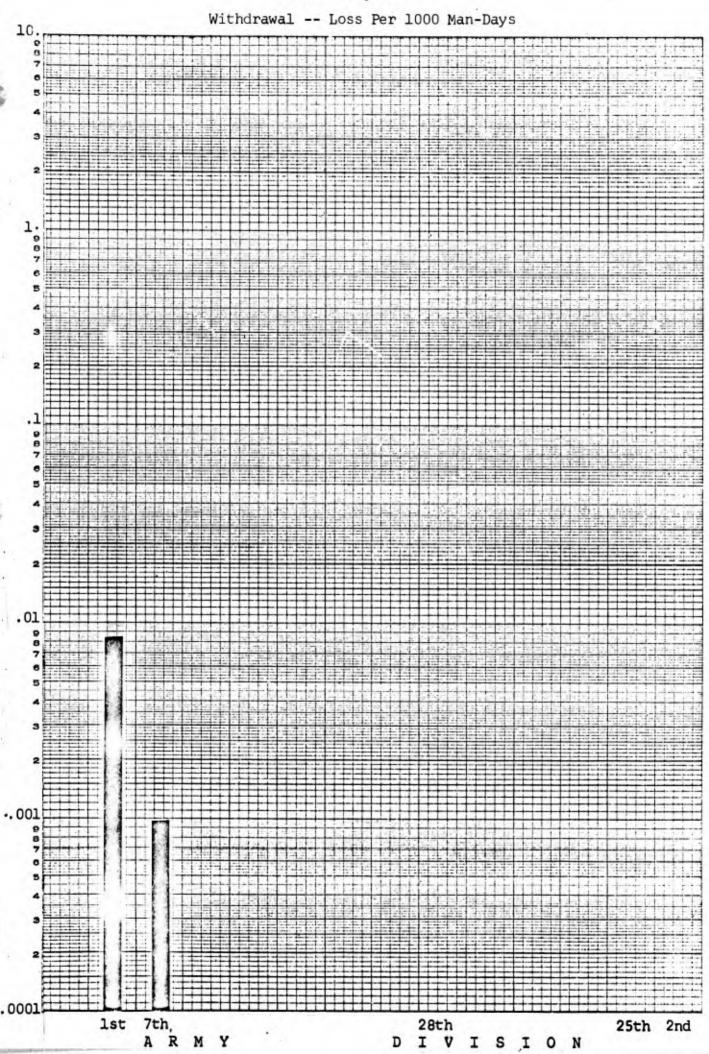
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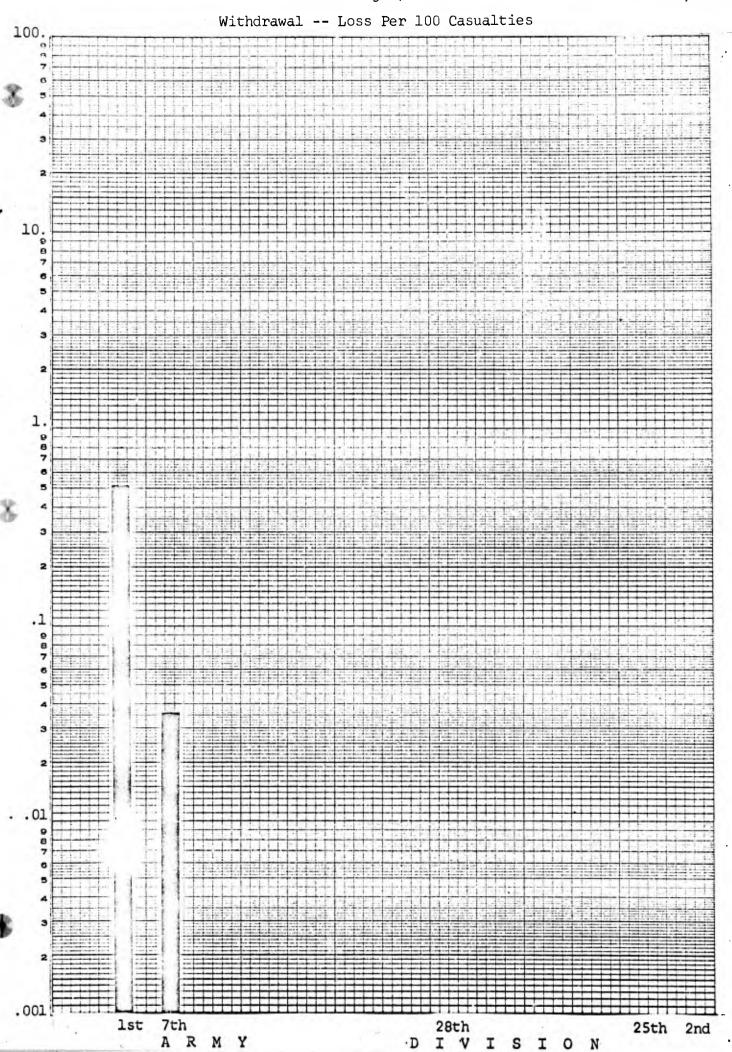


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#### Enclosure D-1

# SPECIAL ASPECTS OF COMBAT OPERATIONS

### IN EUROPE IN WORLD WAR II

While there were substantial geographical and other differences between the four European theaters of operation for which we have assembled some data (North European Plain, North European Hill Region, Italy, and Mediterranean-Tunisia), there were several common factors. The most important was the nature of the enemy armed forces, which had a sophistication and weapons technology making them at least fully comparable in combat capability to US forces in most significant characteristics, such as weaponry, tactical doctrine, and leadership. Furthermore, this enemy fought with determination, resourcefulness and great skill.

Among the important characteristics of German combat operations which affected the intensity of combat, and equipment loss, rates were the following: use of carefully prepared field fortifications, even when hastily constructed; skillful delaying operation tactics; excellent employment of artillery (although less effective than newly developed American artillery doctrine) in all combat postures, including effective counterbattery doctrine; frequent counterattacks in defense and retrograde operations; considerable superiority of German tanks in quality, but inferiority in numbers; leadership imbued with the understanding of the value of tactical and strategic improvisation in order to achieve surprise.

In all of the operations under consideration, the overall Allied (and particularly US) force strength was substantially superior to that of the enemy and (with the exception of Tunisia) enjoyed clear-cut air superiority. Despite marked differences in terrain and population density, the operational areas were inhabited by a highly civilized population (again with the partial exception of Tunisia), and communications nets were good, except in the most mountainous regions. The climate was temperate, and fairly damp, particularly in Northwest Europe.

The Tunisian operation data in the report is brief, and the records incomplete. In addition to the significance of the German ability to operate reasonably effectively in the air, it is also worth noting that US forces were still very inexperienced in modern war, while the Germans were extremely battle-wise. This factor played some part in all subsequent operations in the West, but became relatively less significant as more and more American units gained experience.

The First US Army operated on the North European Plain, and in the fringe of the North European Hill Region. This was the area which was most favorable to modern mobile tactics of the sort introduced by the Germans with their  $\underline{blitzkrieg}$ . Thus it was the area where the Allies concentrated their greatest offensive effort, and where the Germans concentrated their efforts to defend the German homeland. This led to very intensive combat during most of the First Army's operations, particularly during the period for which we include data. Not unexpectedly, therefore, the general equipment loss rates were higher in this army's operations than in those of the other two armies operating in Europe which are considered in this report. Also, it was in this area where a determined and resourceful foe could be expected to undertake counteroffensive action that could be most damaging. This suggests, therefore, that any future operations against a highly competent enemy, in such relatively open country, will require prior provisions for the possibility of large-scale emergency replacement of equipment.

The Seventh US Army operated in country that was, on the average, considerably more rugged than that of the First Army. Thus, so long as other operational areas were available, it would be expected that both sides would not make as intensive an effort in this region. And, since defense was relatively easier, equipment loss rates in both defense and withdrawal would be likely to be less severe than in more open country. If, on the other hand, it should in future operations become necessary to push home attacks in such an area, which would thus require an intensification and strengthening of the defensive effort, loss rates would be likely to become higher, and might, despite modern doctrinal developments, approach those of World War I.

In Italy the Fifth Army encountered terrain that was, on the average, considerably more rugged than that in Northwest Europe. As a result, the Germans, exercising economy of forces, deliberately empoloyed the terrain for delaying purposes, without any attempt--save for the special circumstances at Anzio--to establish impenetrable defenses to be held at all costs. This meant, then, that Allied attack loss rates would be high, but not so high as

they could have been if the defense had been stronger. The result was generally moderate conflict, interspersed with periods of intense conflict during periods of Allied offensives. The most intensive period of combat for the Fifth Army was that in which the VI Corps was involved, for a little more than a month after its initial landings at Anzio, where the Germans made determined efforts to eliminate the beachhead.

#### Enclosure D-2

# SPECIAL ASPECTS OF TENTH ARMY OPERATIONS ON OKINAWA

The last battle of the war in the Pacific was fought under circumstances which made it somewhat different from earlier encounters with the Japanese. There had been earlier landings in which the Japanese did not man strong defenses on and immediately behind the beaches, but this often can be attributed to the need to defend extensive areas with modest forces or to the achievement of a measure of surprise by American forces. In Okinawa the Thirty-second Imperial Army had the forces to build and man strong beach defenses; positions were indeed built, but the command elected not to occupy them. The beaches and, to some degree the comparatively wild and unsettled northern part of the island, were abandoned to the assaulting forces. The defenders chose to make their stand in the south and away from the most likely landing beaches, on ground which offered the best opportunity for a strong static defense. Several years of industrious preparation had transformed the ground into a fantastically complex system of caves, tunnels, and emplacements tied into a highly effective fire support pattern. The island was reputed to be the site of a major artillery school and the volume and accuracy of Japanese artillery fire, as compared with earlier experience, tended to confirm this.

After landing virtually unopposed on 1 April, 1945, the principal assault turned south and soon encountered the forward elements of the main defense. By 4 April the attacking forces were facing well-prepared positions, covered by wire and minefields and supported by heavy machine gun, mortar, and artillery fire. The Japanese showed great skill in the use of their 47 mm antitank guns. The main thrust of the attack was across corridors and into prepared positions. Maneuver, except in a most restricted local sense, was not possible. The battle became a repetitious pattern of close assault with high casualties, hurried consolidation, and Japanese counterattack. If the counterattack did not come by day there was almost certain to be an infiltration attempt at night. The defenses were not uniformly strong in personnel throughout their depth, but long-range fire coverage was consistently heavy. The Japanese tended to occupy themselves with the

immediate foreground of the position. Counter-battery fire, or fire against installations and communications, was not a prominent element of the defense, although not completely absent. The defenders exhibited their expected willingness to die on the ground rather than abandon or surrender a position and only late in the campaign did their morale flag to the point where this was not the case.

In many cases a local defense point would be based on a hill, the interior of which was a honeycomb of tunnels. The heaviest sort of preparatory fire would usually force the defenders into the interior of the position; when the fire lifted they again manned the positions at the tunnel ends and took advancing US infantry under fire. The mutual fire and personnel support plans of these positions had been carefully developed and it was routine to expect counterattack by fire and fresh troops when an attack was making any real progress. This progress, in turn, was slow and painful since each tunnel mouth and cave had to be taken under direct assault and destroyed or sealed with heavy explosives.

It was against this sort of defense the attackers operated from early April until late May. The center of the defense system was an imposing hill to which there were no easy approaches. The broken terrain pattern limited visibility and direct fire range for the attack, since the Japanese usually controlled some higher point. The road system of Okinawa was of the primitive quality to be expected. Combat engineers developed the net adequately to support minimum military needs except in periods of extended rain, several of which were encountered. During these times logistics tended to control operations. The total effect was to make the burden on vehicles somewhat greater than would otherwise have been the case, but this was more than offset, in the comparative sense, by the relatively short distances between beaches, supply points, and forward units.

In summary, the fighting for Okinawa was characterized by a particularly vicious type of close combat where the bulk of the casualties were taken by assault infantry and their weapons. Tanks were particular targets, since they operated purely in an infantry support role. Distances were short and transport problems were limited to those posed by relatively short periods of heavy rain and a measure of fairly high humidity. There were no other extremes of climate or temperature with significant impact on equipment

#### Enclosure D-3

# SPECIAL ASPECTS OF COMBAT OPERATIONS IN KOREA

#### General

As pointed out in Section III of the report, the records suggest that in its operational aspects the war in Korea was very much different in nature from the operations in World War II. In addition to the obvious relevance of a new political environment, and the first impact of anything like mutual nuclear deterrence, this operational difference was due to the difference in the quality of the enemy perhaps even more than the difference in the nature of the situation. There were other factors as well.

Since the exact relevance of this issue to the overall purposes of the study is not yet clear, and since both time and funds were limited, HERO did not devote to this topic the resources in time and effort that it undoubtedly deserves. The following discussions, however, are relevant to the discussion in the report, and would provide a start toward the kind of investigation which may be desirable to ascertain the extent to which the differing natures of wars, and the differences in quality of opponents, may affect equipment as well as personnel casualties.

# Experience of the 25th Division

The 25th Division was engaged in operations within the Pusan perimeter when, on 15 September, 1950, the Inchon landing "loosened up" the general nature of the war. When the North Korean forces began withdrawal on 19 September, the Division began to move, at first against rather stubborn resistance. Progress increased with time and by 30 September a breakthrough had been achieved. Fighting was characterized by a series of small but stiff encounters as the NK forces withdrew. Mine fields, blown bridges and cratered roads impeded progress.

The Division came to rest after a week of such fighting in an area north of the 38th Parallel. A period of counter-guerrilla operations occupied the Division for the month of October. Rain, fog, haze, and heavy cloud cover aided the enemy. Early in November the Division began movement to the north. Small enemy groups fought delaying actions and laid ambushes, adding to these efforts land mines, blown bridges, and landslides.

Between 19 - 21 November the Division moved to the extreme north, some 175 miles over very poor roads. After jumping off on the 24th, against light opposition, the Division encountered strong resistance on the 27th. On 29 November the withdrawal began. Supply and equipment losses mounted. The G-4 of the Division commented that little judgment was used in the destruction or abandonment of supplies and equipment, although in his view morale remained high. In any event, the withdrawal continued until the Imjin River was reached, impeded by a flood of refugees, and extreme cold weather. The latter half of December was spent in a new defensive position.

The Chinese New Year's offensive again forced a withdrawal when a ROK division was penetrated on the right flank of the Division. By the end of the month the Division was again on the offensive. There were periods in reserve and of relatively light activity until the attack was resumed on 16 February. The Division took up positions along the south bank of the Han River. Spring thaws and rain made road conditions poor. On March 7 the Division crossed the river under mortar and automatic weapons fire and played its part in the following offensive. Resistance was light to moderate until early April. There began then a see-saw period of attack and defense with another period of withdrawal sandwiched in. Until the end of June the operational pattern was one of attack, patrol and defense as both sides moved to stabilize on favorable positions.

The history of the 25th Division for the period covered here was one of varied experience, covering many combat postures at several levels of intensity. In some ways its history may be regarded as average, if not typical.

The enemy faced by the 25th, initially North Korean and later Chinese Communist, used tactics which suited their state of equipment and natural characteristics. They were indefatigable diggers. Their organization of defensive infantry fires was good. On the attack they continued to press home in the face of large casualties. On the defensive they were cunning and tenacious. Their use of artillery was quite primitive, and far less effective than that of the UN forces. They were proficient in their use of mines and

booby traps, and employed them freely. They destroyed bridges and roads as a matter of practice. At night they were effective. The Communist forces often attacked blindly against heavy fire. Their logistics systems, particularly in exploitation of a penetration or a local victory, was primitive.

Korea is not a gentle country in which to fight. It is extremely hilly; roads were primitive in 1950, and rail communications poor. The climate is hot and humid in summer, extremely cold in winter. There are periods of heavy rain and snowfall. Rains and thaws make the maintenance of roads and emplacements a heavy chore with little respite. There are extensive periods of fog and haze.

# Experience of the 2nd Division

# The 9th Infantry Regiment - August, 1950

The 2nd Division was stationed at Fort Lewis, Washington, when it was alerted for duty in Korea. Its situation at the time was typical of a unit in fairly routine training and garrison duties during that part of the year when routine personnel transfers are increased by the departure of senior officers and noncommissioned officers for extended periods of schooling. The Division faced and solved in admirable fashion the host of problems involved in getting up to strength, re-equipping, loading, and sailing for foreign duty. The availability of shipping, among other factors, required piece-meal departures. As a result, units arrived as regimental combat teams and were committed as required by a tense situation. There is, as a result, no coherent body of documentation at the division level for the period 6 - 31 August 1950. Units did report from time to time, usually in incomplete fashion. Equipment loss reports were incomplete and irregular, but some significant information can be extracted from the record. This information is recorded here in the hope that it may be useful in comparison to losses sustained by units fighting under similar exterior physical conditions, but not in a unit situation like that experienced by, for example, the 9th Infantry.

Elements of the 9th Infantry and 15th Field Artillery sailed from the Puget Sound area on 17, 18, and 19 July and reached Pusan on the 31st. On 6 August 1/9, 1 platoon of 4.2 mortars, and Battery A, 15th FA were fed into the lines. On 8 August with further units in hand, the 9th RCT (less 3rd Bn) resumed the attack against light resistance from North Korean troops entrenched on high ground. What follows is a brief description of typical 2nd Division operations for the remainder of August, 1950.

- 9 Morning counterattack on RCT 9 (-) by NK troops. Beaten off, followed by 9th Inf attack against increasing resistance from hasty defensive positions.
- 10 NK counterattack; 1/9 maintained advance, others held up.
- 11 NK troops thought to be an elite unit again attacked; 3/5, an all-Negro unit, was ambushed while on the move at 0100. Two companies were cut off. Remainder of battalion withdrew; it appears that personnel from these units were reassigned to other 9th Inf elements.
- 12 Two battalions of the 9th Inf were assigned the task of clearing and keeping open the MSR under control of 24th Division. For a period of 16 days fighting was described as "heavy" as NK forced tried to regain control of the MSR. Losses from heat and WIA were high.

For the remainder of the period fighting was intense as the NK forces struggled to hold short of the Naktong River. US air support increased in availability and effectiveness. There were several heavy rains which, added to the basic nature of the Korean road system, decreased the mobility advantage of US units. RCT 23 first appears in the record on 15 August; the 2d Division was complete in Korea on the 24th. On that date the Division took over the Naktong sector previously held by the 24th Division with 9th and 38th up; the 23rd returned to the Division on August 28. The North Korean forces prepared for counterattack as the Division established a wide-front defensive position.

The general exterior conditions of operations involved hot, humid weather with occasional heavy rains. The road net was primitive. The terrain, while not mountainous, is hilly and offers good opportunities for digging in and gives fair concealment. Natural cover is fair. The units of the 2nd Division were faced with rapid entry into combat immediately after a long and enervating sea voyage. Troop units had not had the opportunity to live and train together to the degree desirable because of the late input of fillers.

The 9th Infantry was in some sort of action for 24 days in August. Not all elements were engaged every day, but the average intensity of combat, and the unfavorable conditions faced by the regiment, produce a body of experience which should be examined-fragmentary though it may be. The following table compares the experience of several 2nd Division units:

UNIT	Off	Enl	KIA	WIA	MIA	TOTAL	NB CAS	DAYS/ACTION
		0767	305	550	7.77	007	430	24
9th Inf	145	2/61	1.05	550	177	827	419	- '
23rd Inf	151	3311	14	51	-	65	115	15
38th Inf	152	3450	12	26	2	40	59	10
37 FA	47	580	3	26				
15 FA	42	<b>590</b>	10	15				
82 AAA	41	721		44		4	6	11
72 Tk	44	643					1.0	3

A tank status report of September 2 shows that the 72 Tk Bn had lost 1 M-26 tank and 2 M-4. An additional 5 M-4 had been damaged but were repaired and returned to service. The 9th and 23rd Infantry had lost 1 M-4 each to enemy action. In another fragmentary report we see that the 39th FA Bn had lost 3  $2\frac{1}{2}$  T trucks, burned on the MSR by North Korean troops; 82nd AAA had lost 1 M-16 and 1 M-39.

On September 4, a staff officer, while making a road reconnaissance, got the following vehicle and weapon loss data from the 38th Inf:

2½ T Truck 7
3/4 T Truck 3
表 T Truck 9
Pistols 15
Rifles, M-1 14
BAR 11
57 RR 3
75 RR 1
MG 50 cal 3
MG 30 cal, light 3
MG 30 cal, hvy 6

A partial tank status report of the same date gives the following information on the 72nd Tank Bn:

M4A3E8 - 16 operational, 1 non-operational, 6 lost in combat M26 - 12 operational, 7 non-operational, 1 lost in combat (The "non-operational" figure does not include combat loss)

"C" Co, 72nd Tank Bn, was detached from the parent unit during the period but it was reported that it lost 3 tanks, type unknown. The organic tank company of the 23rd Inf reported 2 losses of M4 tanks; other units reported no loss.

Losses of ½ T trucks were given in an undated pencilled note, attached to a G-4 Journal near the end of the period:

9th Inf . . . . . 5
15th FA . . . . 6
Div Hq . . . . 3
37th FA . . . 1
2nd MP Co . . . 2
72 Tk Bn . . . 1
2nd Ren Co . . . 1
23rd Inf . . . . . 1
Total . . . . 20

In the G-4 journal of the 2nd Division there is a message dated 1 September, 1950, signed by (Colonel) John G. Hill, Commanding Officer, 9th Infantry, which reads:

"CG, 2d Inf Div (attn G-4)

"Units of the 9th Inf coming out have very little equipment, particularly automatic weapons. BARs, machine guns both 30 and 50 caliber, and mortars; also recoilless rifles are almost a total loss.

"It is requested that immediate steps be taken to get this equipment laid down for two battalions so that as fast as strength builds up the weapons will be available so we may fight again."

It is recognized that the above account does not lead to any quantification of casualties and losses which can be compared with other experience. The account is included in this report despite this fact, in the belief that it gives valuable insights into the conditions produced when a green organization is committed to heavy action in a difficult environment. The 9th Infantry gave an excellent account of itself under most difficult conditions. As a result of such conditions, a large requirement for replacement of materiel was generated. As was to be the case later with the Division at Kunu-ri, an abnormal situation produced temporary peaks in demand. The effect of such demands on the supply system is discussed elsewhere in this report.

## The Ordeal at Kunu-ri

The losses sustained by the 2nd Division in its period of defense and withdrawal in contact, 26-30 November, 1950, were by far the largest developed in this study on the basis of the "per 1000 man/day" computation, and the personnel casualty rate was also the highest encountered in the study, although of course only for a very short period. The following narrative describes the

general tactical situation, major events, and surrounding conditions of this engagement. It must be recognized that this experience was in many ways unique and inferences should be made with great care. The battle does, nevertheless, represent the extreme high end of the loss spectrum and the fact that these losses did indeed occur should not be allowed to escape notice. Such concentrated losses at the division level are bound to have significant impact at some point in the replacement system.

Tactical Situation. After clearing South Korea of North Korean forces in September 1950 and reorganizing along the 38th Parallel, Eighth US Army in October launched an offensive aimed at the Yalu River. Second Infantry Division, attached to IX Corps, began moving north November 5, 1950 with the 25th Infantry and 1st Cavalry Divisions on its left and Republic of Korea (ROK) II Corps on its right. By November 25 the division had progressed north of Kunu-ri against stiffening resistance.

Shortly before 2400 November 25 the entire division front was attacked in great strength by an enemy identified as Chinese Communist Forces (CCF). Throughout November 26-27 the division held off constant heavy assaults to enable the two divisions on its left to withdraw from advanced and exposed positions. On November 27 ROK II Corps collapsed and 2nd Division refused its right flank but was unable to prevent movement of large CCF elements past this flank.

The division was ordered November 28 to withdraw southward, a movement begun by pulling out service and support elements and slightly contracting the division front. On November 29 the Division CP moved to 6 miles south of Kunu-ri while its infantry regiments maintained a sharp rearguard action. The Division CP was overrun during the night and the division commander ordered a withdrawal of some 5 miles toward Sunchon over a single road. It was not known at the time that the CCF already had cut this route near its southern end and set up road blocks.

The division, less the 23d Inf Regt, the 15th FA Bn, one company of the 72d Tk Bn, and some odds and ends, which had been left north of Kunu-ri to cover the 25th Inf Div's withdrawal, started south at 1330 November 30. It made its way through a 5-mile guantlet of fire from hills on both sides of the road. The road itself not only was impeded by CCF roadblocks, but hit and skidding vehicles blocked it along its length and made it all but impassable except on foot.

North of Kunu-ri the 23d Inf and its attachments, plus the disorganized and demoralized Turkish Brigade, elected to move out

by a route west of that taken by the division. Faced with the triple difficulty of holding off the CCF attack while organizing to leave, hauling 18: 105 mm howitzers over the narrow and tricky road, and finding transportation for the troops, the irfantry and artillery commanders agreed on a unique expedient. They decided to cover the withdrawal with the fires of the guns, then destroy them and use their prime-movers to haul troops. In 22 minutes the 18 pieces fired 3206 rounds. Then their crews thermited the tubes, from which the paint had already melted, removed sights and locks, and abandoned 17 of the pieces; one was somehow extricated. The unprecedented artillery fire apparently subdued the attackers; the 23d and its accompanying units got out without further loss.

Surrounding Conditions. The enemy. The attack was conducted by a CCF force that ultimately was built up to an estimated five divisions and attained positions on the front, both flanks, and rear of 2nd Inf Div.

<u>Weather</u>. Very cold with occasional snow. The roads and tracks were icy and the ground frozen so that foxholes could not be dug.

Road net. The Kunu-ri-Sunchon road is a two-lane, gravel surfaced, winding mountain road dominated almost along its length by high ridges on both sides.

Equipment. Maintenance of motor vehicles in all categories had been inadequate for some time prior to the five days of battle and movement because of a chronic shortage of parts. In addition to a number of vehicles sent to Army maintenance centers for lack of parts prior to the action, 39 general purpose and 47 tracked vehicles awaiting parts at the Division ordnance company had to be abandoned because they could not be moved.

Tota: Duration:	FIRST ARMY- l Strength: l Casualties : 206 Days/6 1944-22 Feb	60,080,930 5: 118,319 5.75 Months	Total Strength: Total Casualtie Duration: 6.75	SEVENTH ARMYNW EUROPE Total Strength: 50,942,000 Total Casualties: 66,310 Duration: 6.75 Months 5 November 1944-12 May 1945			
	CUMULATIVE LOSS	MONTHLY AVERAGE	CUMULATIVE LOSS	MONTHLY AVERAGE			
1 Truck, ½ Ton 4x4 #	.06215 3.1559 (3734)	(553.19)	.03437 2.6406 (1751)	(259.41)			
2 Truck, 2½ Ton (all types) # @	.02558 1.2990 (1537)	(227.71)	.03264 2.5079 (1663)	(246.37)			
3 Tank, Medium # @	.01841 .9348 (1106)	(163.85)	.01142 .8777 (582)	(86.22)	1		
4 Carbine, .30, Ml # @	.17533 8.9031 (10534)	(1560.61)	.22082 16.9643 (11249)	(1666.52)			
5 Rifle, .30, BAR, M1918 # @	.05494 2.7899 (3301)	(489.04)	.03447 2.6482 (1756)	(260.15)	200		
6 Rifle, .30, Ml # @	.28896 14.6680 (17355)	(2571.14)	.37539 28.8388 (19123)	(2833.04)			
7 Rifle, .30, M1903 Series # (includes Snprs)	.00932 .4733 (560)	(82.96)	.01429 1.0979 (728)	(107.85)			
8 Machine Gun, .30 (all # types)	.05128 2.6040 (3081)	(456.45)	.02817 2.1641 (1435)	(212.60)			
9 Howitzer, 105 mm # @	.00188 .0955 (113)	(16.74)	.00016 .0121 (8)	(1.19)			
Howitzer, 155 mm # @	.00038 .0194 (23)	(3.41)	.00029 .0226 (15)	(2.22)			
ll Mortar, 81 mm #	.00636 .3229 (382)	(56.59)	.00385 .2956 (196)	(29.04)			
12 Radio Set, SCR-300 #			.01419   1.0903   (723)	(107.11)			
13 Radio Set, SCR-608 #			.00024 .0181 (12)	(1.78)			
14 Radio Set, SCR-610 #			.00322 .2473 (164)	(24.30)			
15 Generating Unit #	.00073 .0372 (44)	(6.52)	.00035 .0271 (18)	(2.67)			
x Tank, Light #	.00436 .2214 (262)	(70.01)	.00349 .2684 (178)	(26.37)			

FIFTH ARMY--ITALY TENTH ARMY--PACIFIC Total Strength: 67,107,000 Total Strength: 13,983,631 Total Casualties: 78,371 Total Casualties: 39,420 Duration: 373 Days/12.25 Months Duration: 91 Days/3 Months 1 April-30 June 1945 9 September 1943-16 September 1944 CUMULATIVE MONTHLY CUMULATIVE MONTHLY LOSS AVERAGE LOSS AVERAGE .02955 .01602 2.5303 .5682 (1983)(161.88); (224)(74.67); .02845 .01008 2,4358 .3577 (1909)(155.84) (141)(47.00) .00876 .01051 .7503 .3729 (588)(48.00); (147)(49.00) .07332 .12765 6.2778 4.5282 (4920)(401.63) (1785)(595.00) .03037 .09489 2.6004 3.3663 (2038)(166.38)(1327)(442.33).12018 .11263 10.2908 3.9954 (8065)(658.37) (1575)(525.00) .07360 .00322 6.3021 .1142 (4939)(403.18) i (45)(15.00) i .02542 .01309 2.1768 .4642 (1706)(139.26)(183)(61.00).00073 .00079 .0625 .0279 (49)(4.00) i (11)(3.67).00095 .00014 .0817 .0051 (64)(5.22)(2) (.67).00429 .00350 .3675. .1243 (288)(23.51)(49)(16.33).00034 .00021 .0293 .0076 (23)(1.88) i (1.00)(3) .00356 .00029 .3050 .0101 (239)(19.51)(4) (1.33)

FTRST ARMY

	FIRST	ARMY		11	
т/А*	195 Days ATTACK	ll Days WITHDRAWAL	206 Days TOTAL		T/A*
10,267	2939 .1468%	795 .704%	3734 .1765%		6,805
17,024	891 .0268%	646 .345%	1537 .0438%		9,746
1,133	828 .375%	278 2.230%	1106 .474%		532
167,800	6482	4052 .219%	10534 .0305%		73,63
2,200	2631 .613%	670 2.768%	3301 .728%		2,93
99,000	12894	4461 .409%	17355		54,00
8,208	93	22 .024%	115 .0068%		16,6
4,280	2089	992 2.107%	3081 .349%		2,6
735	46	67	113		
238	13 .028%	10 .382%	23 .0469%		
515	230	142 2.507%	382 .36019		
44	3 13	% 31 .636%	.0482	2%	
82				5%	1
	10,267  17,024  1,133  167,800  2,200  99,000  8,208  4,280  735  238  515	T/A** 195 Days ATTACK  10,267 2939 .1468%  17,024 891 .0268%  1,133 828 .375%  167,800 6482 .0198%  2,200 2631 .613%  99,000 12894 .0668%  8,208 93 .0058%  4,280 2089 .250%  735 46 .0321%  238 13 .028%  515 230 .229%	T/A**       ATTACK       WITHDRAWAL         10,267       2939 .1468%       .704%         17,024       891 .0268%       .646 .345%         1,133       828 .278 .230%         167,800       .6482 .0198%       .4052 .219%         2,200       .2631 .613%       .670 .768%         99,000       12894 .0668%       .4461 .409%         8,208       .93 .0058%       .024%         4,280       .2089 .250%       .992 .107%         .735       .46 .0321%       .828%         238       .13 .028%       .382%         515       .230 .028%       .382%         515       .230 .229%       .2.507%         443       .13 .015%       .636%         820       .204 .57	T/A*       195 Days ATTACK       11 Days WITHDRAWAL       206 Days TOTAL         10,267       2939 .1468%       .704%       .1765%         17,024       891 .0268%       .345%       .0438%         1,133       828 .375%       2.230%       .474%         167,800       .6482 .0198%       .219%       .0305%         2,200       .2631 .613%       2.768%       .728%         99,000       .12894 .0668%       .409%       .085%         8,208       .93 .0058%       .024%       .0068%         4,280       .2089 .250%       .2107%       .349%         735       .46 .0321%       .828%       .0746%         238       .13 .028%       .382%       .0469%         515       .230 .229%       .2507%       .3601%         443       .13 .015%       .3626%       .444 .0482         820       .204       .57       .261         820       .204       .57       .261	T/A**       195 Days ATTACK WITHDRAWAL ATTACK       11 Days ATTACK WITHDRAWAL TOTAL       206 Days TOTAL         10,267       2939 .1466%       .795 .704%       .1765%         17,024       891 .0268%       .646 .345%       .1537 .0438%         1,133       628 .375%       2.230%       .474%         167,800       .6482 .0198%       .4052 .10534 .0305%         2,200       .2631 .613%       .2768%       .728%         99,000       .12894 .4461 .7355 .085%       .085%         8,208       .93 .0058%       .024%       .0068%         4,280       .2089 .250%       .2107%       .349%         735       .46 .0321%       .828%       .0746%         238       .13 .028%       .382%       .0469%         515       .230 .229%       2.507%       .3601%         443       .33 .015%       .636%       .444 .0482%

FIFTH ARMY

			·	FIFTH ARMY			•	
206 Days TOTAL			T/A*	329 Days ATTACK	373 Days			
3734 .1765%			6,805	1821 .0813%	1983 .0781%			
1537 .0438%			9,746	1760 .0549%	1909 .0525%			
1106 .474%			532	560 .319%	588 •296%			1
10534 .0305%			73,639	4447 .0183%	4920 .0179%		 	1
3301 .728%			<b>2,</b> 939	1897 .196%	2038 .186%		1 1 1 1 1 1	1 1 1 1
17355 .085%	-		54,000	7797 .0439%	8065 .0400%		[	 
115 .0068%			16,684	4399 .0801%	4493 .0722%		i i i i i i	
3081 .349%			2,636	1591 .183%	1706 .173%		 	 
113 .0746%			328	49 .0454%	49 .0401%		i [ ] ] ]	1 1
23 .0469%		The state of the s	211	29 .0417%	64 .0813%		! ! ! !	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
382 .3601%			430	272 .192%	288 .179%		1 1 1 1 1	
				 			1 1 1 1 1	
						1		
 				1 1 1 1 1 1			 	
44 .0482%	          		595	21.0107%	23 .0103%			
261 .1545%			329	236 .218%	239 .195%			
	3734 .1765% .1537 .0438% .1106 .474% .0305% .3301 .728% .17355 .085% .115 .0068% .3081 .349% .113 .0746% .23 .0469% .382 .3601%	3734 .1765% 1537 .0438% 1106 .474% 10534 .0305% 3301 .728% 17355 .085% 115 .0068% 3081 .349% 113 .0746% 23 .0469% 382 .3601%	TOTAL  3734 .1765%  1537 .0438%  1106 .474%  10534 .0305%  3301 .728%  17355 .085%  115 .0068%  3081 .349%  113 .0746%  23 .0469%  382 .3601%  44 .0482%  261	TOTAL T/A*  3734 .1765% 6,805  1537 .0438% 9,746  1106 .474% 532  10534 .0305% 73,639  3301 .728% 2,939  17355 .085% 54,000  115 .0068% 16,684  3081 .349% 2,636  113 .0746% 211  382 .3601% 595  444 .0482% 595	206 Days TOTAL       T/A**       329 Days ATTACK         3734 .1765%       6,805       1821 .0813%         1537 .0438%       9,746       1760 .0549%         1106 .474%       532 .560 .319%         10534 .0305%       73,639 .4447 .0183%         3301 .728%       2,939 .1897 .196%         17355 .085%       54,000 .7797 .0439%         115 .0068%       16,684 .4399 .0801%         3081 .349%       2,636 .1591 .183%         113 .0746%       211 .29 .0454%         23 .0469%       430 .272 .192%         382 .3601%       430 .272 .192%         44 .0482%       595 .21 .0107%         261 .329 .236	206 Days TOTAL         T/A*         329 Days ATTACK         373 Days TOTAL           3734 .1765%         6,805 .0813%         1983 .0781%           1537 .0438%         9,746 .1760 .0549%         1909 .0525%           1106 .474%         532 .560 .588 .296%         588 .296%           10534 .0305%         73,639 .4447 .0183%         4920 .0179%           3301 .728%         2,939 .1857 .2038 .186%         2038 .186%           17355 .085%         54,000 .7797 .0439% .0400%         0065 .0400%           115 .0066%         16,684 .4399 .0801% .0722%         0.722%           3081 .349%         2,636 .1591 .1706 .183% .173%           113 .0746%         328 .49 .0454% .0401%           23 .0469%         430 .272 .288 .179% .179%           362 .3601%         430 .272 .288 .179% .179%           44 .0482%         595 .21 .0107% .0103%           261 .329 .236 .239	206 Days         T/A*         329 Days         373 Days           3734 .1765%         6,805         1821 .0613%         1923 .0781%           1537 .0438%         9,746         1760 .0549%         1909 .0525%           1106 .474%         532         550 .519%         588 .296%           10534 .0305%         73,639 .0163%         4447 .0163%         4920 .0178%           3301 .728%         2,939 .198%         1887 .0439%         2038 .186%           17355 .065%         54,000 .0439%         7797 .0439%         8055 .0400%           115 .0668%         16,884 .0801%         4399 .0801%         .0722%           3081 .349%         2,636 .183%         1591 .173%         1706 .183%           113 .0746%         328 .0409%         49 .0417%         .0401%           23 .0469%         430 .0408%         272 .0417%         288 .192%           .100%         .192%         .179%	206 Days   1/A*   329 Daye   373 Days   373 Days   3734   1.765%   6.805   1821   1.983   1.0781%   1.537   1.0813%   1.0823   1.0781%   1.0809   1.0525%   1.0813%   1.0525%   1.0813%   1.0525%   1.0813%   1.0525%   1.0813%   1.0525%   1.0813%   1.0525%   1.0813%   1.0525%   1.0813%   1.0813%   1.0913%

2

per 1000 man-days per 100 casualties		ATTACK	DEFENSE	WITHDRAWAL	TOTAL	
ruck, ½ Ton 4x4	# @	.03345 2.1809	.00959 .7971	.13675 3.0179	.03552	
Puck, 2½ Ton (all types)	# a	.02517 1.4895	.00232 .1932	.09510 1.8532	.02419 1.6510	
ank, Medium	# a	.01170 .7289	.00291 .2415	.04784 1.0556	.01228 .7339	
arbine, .30, Ml <sup>(1)</sup>	# []	.10923 6.6005	.11116 9.2392	.65173 13.6896	.12168 7.0478	
ifle, .30, BAR, M1918	# [a	.05240 2.8492	.01831 1.5217	.11392 2.4939	.05357 2.8512	
ifle, .30, Ml <sup>(1)</sup>	# @	.17656 11.4517	.03532 2.9348	.62044 ll.4469	.17734 10.8434	
ifle, .30, M1903 Series (1)	#	.02223 1.7045	.00828 .6884	.01401 .4660	.01981 1.6233	
achine Gun, .30 (all types)	# @	.02579 1.6903	.02557 2.1256	.17038 3.8090	.02949 1.8523	
owitzer, 105 mm	# @	.00066 .0389	.0092 <del>1</del> 2 .3890(2)	.00927	.00089	
owitzer, 155 mm	# @	.00030	.0020 <del>(</del> 3)	.00152	.00041	
ortar, 81 mm	# @	.00396 .2520	.00459 <sup>(3)</sup> .7588 <sup>(3)</sup>	.02432	.00450	
adio Set, SCR-300 <sup>(4)</sup>	# [a	.01383	.00726 .6039	.01620 .6062	.01419 1.0903	
adio Set, SCR-608 <sup>(4)</sup>	# . a	.00012	.00029	.00065	.00024	
adio Set, SCR-610 <sup>(4)</sup>	# @	.00283	.00087	.01004	.00322	
enerating Unit, M5	# @	.00030	.00021(3)	.00470	.00041	
ank, Light	# a	.00291 .2256	.00262	.02036	.00292	

Based on assumption that Seventh Army figures included First French Army for all except withdrawal.

Data unavailable. Factor for man-days based on withdrawal; factor for casualties based on attack rate x 10.

# DIVISION MEAN VALUES - WW II Only

loss per 1000 man-days loss per 100 casualties		(2) ATTACK	(3) DEFENSE W	(3) TITHDRAWAL	TOTAL	
uek, ½ Ton 4x4	#6	.04405	.02898 2.0382	.90323 3.7642	.05982 1.9375	. !
uck, 2½ Ton (all types)	# 0	.02487 .3736	.00543	.28111 1.1715	.02065 .7003	
nk, Medium	#4	.01339		.07834 .3265	.02192 .7673	
(5) rbine, .30, Ml				1		
fle, .30, BAR, M1918	#@	.08709 1.4663	.07971 5.6051	.83410 3.4761	.09446 2.5485	
(S) fle, .30, M1					1	
(5) fle, .30, M1903 Series						
achine Gun, .30 (all types)	# @	.04454 .4673	.05254 3.6943	.50691 2.1125	.04824 1.4820	1
witzer, 105 mm	#	.00888		.05530 .2305	.00253 .0469	
owitzer, 155 mm	#	(6) .01129 .8475	(6) .00195 .289(6)		.0072 .0236	
ortar, 81 mm	#	.01541 .1473	.03174 1.0922	.11060 .4609	.01247 .2692	
adio Set, SCR-300 <sup>(7)</sup>	#	.03882 .5477			.03973	
adio Set, SCR-608 <sup>(7)</sup>	#	.00247 .0427			.01296 .5892	1
adio Set, SCR-610 (7)	# @	.01907	.04174 .6556		.03544 1.4829	

		1				1
5 Rifle, .30, BAR, M1918	# @	.08709 1.4663	.07971 5.6051	.83410 3.4761	.09446 2.5485	
(5) 6 Rifle, .30, Ml						
7 Rifle, .30, M1903 Series						1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
8 Machine Gun, .30 (all types)	#   a	.04454 .4673	.05254 3.6943	.50691 2.1125	.04824 1.4820	
9 Howitzer, 105 mm	# @	.00888 .0388		.05530 .2305	.00253 .0469	
10 Howitzer, 155 mm	# @	(6) .01129 .8475 <sup>(6)</sup>	(6) .00195 .289(6)		.0072 .0236	
ll Mortar, 81 mm	#	.01541 .1473	.03174 1.0922	.11060 .4609	.01247 .2692	
12 Radio Set, SCR-300 <sup>(7)</sup>	# []	.03882 .5477	, , ,		.03973 1.4245	
13 Radio Set, SCR-608 <sup>(7)</sup>	#   @	.00247 .0427			.01296 .5892	
14 Radio Set, SCR-610 (7)	#@	.01907 .2800	.04174 .6556	·	.03544 1.4829	
15 Generating Unit, M5(8)	# @		i 1 1 1		.00205 .0932	

(1) Data is spotty and, due to reporting practices, not reliable.

(2) Includes 1st Division, 1000/man-day factor only, where data is available.
(3) 28th Division only. 45th Division defense data is an extreme case at Anzio.
(4) Includes 6th Armored Division data where available. This column is most reliable of this consolidation.

(5) Figures unreliable below Army level.(6) Includes some data shown as "other" posture.

(7) All signal data is particularly unreliable.
(8) Reporting practices make all data invalid except total.

#### Enclosure E-5

#### TENTATIVE MATHEMATICAL FORMULAE FOR

#### PREDICTING MATERIEL LOSSES IN WAR

(Based upon a study by Edward S. Gilfillan, Jr.)\*

Six categories of materiel were chosen for study. One of these was the jeep. The next was made up of all types of  $2\frac{1}{2}$  ton trucks. The third was all types of .30 caliber rifles except the BAR and the carbine. The fourth was the carbine, all models. The fifth was made up of all .30 caliber machine guns too heavy to be hand fired. The sixth was made up of all 60 and 81 mm mortars.

It was decided that the end form of the mathematical expressions should be:

$$m_j = M_j \left( -\frac{1}{n} \frac{dn}{dt} + A_j \right) e^{\sum_{k=1}^{\infty} \left( a_{jk} u_{jk} + b_j \right)}$$

where  $m_j$  is the fraction of the materiel of the jth kind lost per day,  $M_j$  is a constant, specific to that particularly kind of materiel to be determined from the data, n is the instantaneous number of troops in the military unit, t is the time in days,  $A_j$  is a constant representing attrition of this specific item of materiel in the absence of casualties (the  $A_j$  were estimated at the beginning of the study from consideration of the nature of the materiel—they were not afterward changed; on this more below), and  $a_j$  and  $b_j$  are constants to be determined from the data subject to the condition

$$\leq$$
<sub>i</sub> ( $a_j u_{ij} + b_j$ ) = 0

<sup>\*</sup>Previously submitted to RAC.

It should be noted here that acceptance of this formula commits one to nothing; the criterion of value is how well it fits the data and this is subject to the objective test applied below.

Casualties are taken as the sum of killed, wounded, and missing.

The independent variables considered are intensity of combat, defined as the negative of the derivative of the logarithm of the number of troops with respect to the time in days, the difficulty of the terrain on a scale on which the terrain of the Motoyama Plateau of Iwo Jima is taken as ten (fortifications are considered part of the difficulty of terrain; in estimating terrain weather is considered to be ideal), the precipitation (rain or snow) in inches of water per month (the instantaneous value, the average over the past three days, or the annual average is taken, whichever is the largest), the temperature at noonday in degrees F, the length of daylight in hours, and the age of the unit in months of combat. These are given in Table 1.

Six auxiliary variables, each a function of the corresponding independent variable only, are now defined as follows:

$$u_1 = -1000 \frac{d \log n}{dt}$$
  $n = \text{number of troops}$ 
 $u_2 = \text{terrain difficulty (scale of 10)}$ 
 $u_3 = 10 \left( \frac{w}{2} - \log \frac{w}{2} - 1 \right)$   $w \text{ is inches of water per month}$ 
 $u_4 = \frac{1}{360} \left( t - 40 \right)^2$   $t \text{ in degrees F.}$ 
 $u_5 = 10 \left( 1 - \frac{h}{18} \right)^2$   $h \text{ is length of daylight in hours}$ 
 $u_6 = 10 e^{\frac{L}{3}}$   $L \text{ is months of combat experience}$ 

These formulae are empirical; the intent is to express the difficulty imposed by the independent variable on combat in approximately equal units. The validity of the formulae, if any, derives from improved fit of the final formulae with the data over the fit when no correlation with combat conditions is attempted. The constants found by the above methods and entering the final formulae are listed in Tables I and II.

Table I

Values of Constants Entering the Formulae

Item	M	A	Ъ
Jeen	.20	.0015	009
2½ ton truck	.20	.0015	023
Rifle	.15	.0005	.019
Carbine	.21	.0005	.065
Machine gun	.78	.0010	006
Mortar	.29	.0010	006

Table II

Correlation Coefficients

Materiel	Intensity	Terrain	Precipi- tation	Tempor- ature	Daylight	Inexper- ience
Jeep 2½ ton	.01	.01	.04	.03	.00	.02
truck	.11	.05	.11	.05	.03	.10
Rifle	08	06	07	05	+.01	01
Carbine	.00	01	.00	02	01	01
30 Cal. machine	01 gun	÷.03	.09	.07	01	01
Mortar	.03	.00	.00	.03	.01	.03

/acre

#### HISTORICAL EVALUATION AND RESEARCH ORGANIZATION

2233 Wisconsin Avenue, N.W., Washington, D. C. 20007 • Area Code 202 / 337-0116

#### ERRATA--VOLUME II

#### Historical Analysis of Wartime Replacement Requirements; Experience for Selected Major Items of Combat Equipment

- Replace Enclosure B-11 (First Army Consolidation) with Attachment 1, herewith.
- 2. Correct Enclosures to conform to values shown on corrected Enclosure B-11:

C-1-a	C <b>-</b> 5-a	C-8-e
C-1-b	C-5-b	C-8-f
C-1-e	C-5-e	C <b>-</b> 9-a
C-1-f	C-5-f	C-9-b
C-2-a	C-6-a	C-9-e
C-2-b	C-6-b	C-9-f
C-2-e	C-6-e	C-10-a
C-2-f	C-6-f	C-10-b
C-3-a	C-7-a	C-10-e
C-3-b	C-7-b	C-10-f
C-3-e	C-7-e	C-11-a
C-3-f	C-7-f	C-11-b
C-4-a	C-7-g	C-12-e
C-4-b	C-7 <b>-</b> h	C-12-f
C-4-e	C-8-a	C-13-e
C-4-f	C-8-b	C-14-e
		C-14-f

- Replace Enclosure C-13-f (bar graph, SCR 608, Withdrawal, per 100 casualties) with Attachment 2, herewith.
- 4. Replace Enclosure E-2 (Loss Density Comparison) with Attachment 3, herewith.
- Replace Enclosure E-3 (Army Mean Values) with Attachment 4, herewith.
- 6. In Enclosure E-5 (Tentative Mathematical Formulae), delete the last sentence in the second full paragraph ("These are given in Table 1.").

TIME PERIOD: 1 August 1944 - 22 February 1945
DURATION: 195 Days - Attack / 11 Days - Withdrawal UNIT: FIRST ARMY THEATER: ETO

X. Gun, 155 mm	#	.00007	.00054	.00010
X. Tank, Light	# @	.00362 .2084 (204)	.01550 .2789 (57)	.00434 .2206 (261)
.5. Generating Unit, M5	# @	.00023 .0133 (13)	.00843 .1517 (31)	.00073 .0372 (44)
4. Radio Set, SCR-610	# a		.24603 4.4280 (905)	and the second s
3. Radio Set, SCR-608	# @		.00054 .0098 (2)	
2. Radio Set, SCR-300	# @		.28817 5.1864 (1060)	
l. Mortar, 81 mm	# @	.00426 .2452 (240)	.03860 .6948 (142)	.00636 .3229 (382)
10. Howitzer, 155 mm	# @	.00025 .0143 (14)	.00245 .0440 (9)	.00038 .0194 (23)
9. Howitzer, 105 mm	# @	.00073 .0419 (41)	.01957 .3523 (72)	.00188 .0955 (113)
8. Machine Gun, .30 (all types)	# @	.03743 2.1567 (2111)	.26370 4.7461 (970)	.05128 2.6040 (3081)
7. Rifle, .30, M1903 Series (all types)	# a	.00835 .4812 (471)	.02420 .4355 (89)	.00935 .4733 (560)
6. Rifle, .30, Ml	# @	.22479 12.9535 (12679)	1.27121 22.8790 (4676)	.28886 14.6680 (17355)
5. Rifle, .30, BAR, M1918	# @	.04702 2.7094 (2652)	.17644 3.1755 (649)	.05494 2.7899 (3301)
4. Carbine, .30, Ml	# @	.13287 7.6562 (7494)	.82645 14.8725 (3040)	.17533 8.9031 (10534)
3. Tank, Medium	# @	.01489 .8582 (840)	.07231 1.3015 (266)	.01841 .9348 (1106)
2. Truck, 2½ Ton (all types)	# @	.01422 .8194 (802)	.19981 3.5962 (735)	.02558 1.2990 (153 <b>7</b> )
1. Truck, ½ Ton 4x4 C&R	# @	.03996 2.3028 (2254)	.40235 7.2414 (1480)	.06215 3.1559 (3734)
Man-Day Factor Casualties		56402.541 97881	3678.389 20438	60080.930
Spread Sheet/Consolidati (Corrected)	lon	ATTACK 1 Aug-15 Dec	WITHDRAWAL 16 - 26 Dec	TOTAL

the contract of the contract o	ii ii	(12679)	(46/6)	(1/333/
7. Rifle, .30, M1903 Series (all types)	#    @	.00835 .4812 (471)	.02420 .4355 (89)	.00935 .4733 (560)
8. Machine Gun, .30 (all types)	# @	.03743 2.1567 (2111)	.26370 4.7461 (970)	.05128 2.6040 (3081)
9. Howitzer, 105 mm	# @	.00073 .0419 (41)	.01957 .3523 - (72)	.00188 .0955 (113)
10. Howitzer, 155 mm	#    @	.00025 .0143 (14)	.00245 .0440 (9)	.00038 .0194 (23)
11. Mortar, 81 mm	#    @	.00426 .2452 (240)	.03860 .6948 (142)	.00636 .3229 (382)
12. Radio Set, SCR-300	# [a		.28817 5.1864 (1060)	 
13. Radio Set, SCR-608	# [a		.00054 .0098 (2)	
14. Radio Set, SCR-610	# @		.24603 4.4280 (905)	
15. Generating Unit, M5	# [a	.00023 .0133 (13)	.00843 .1517 (31)	.00073 .0372 (44)
X. Tank, Light	# @	.00362 .2084 (204)	.01550 .2789 (57)	.00434 .2206 (261)
XX. Gun, 155 mm	# @	.00007 .0041 (4)	.00054 .0098 (2)	.00010 .0051 (6)

See attached NOTE.

loss per 1000 man-days loss per 100 casualties

NOTE:

Because First Army losses were consolidated for the entire 1 August 1944 - 22 February 1945 period, the loss per 1000 man/days and per 100 casualties according to combat postures was computed by extrapolation of figures from First United States Army, Report of Operations, Annex #9: Ordnance Section, using the period 16 December through 26 December as one of withdrawal in contact, and the remaining six and one-half months as a general attack posture. (See attached computations.)

After this computation was made, figures for First Army losses of major items for the period 16-25 December were discovered in Appendix 3, Annex 2, of the First Army Report of Operations, 1 August 44 to 22 February 45. Although this is not so complete or so precise as the Ordnance Annex, and is in some respects inconsistent with the text of the Report proper (page 128, Vol I), it contains an otherwise unavailable breakdown of losses during most of the withdrawal period.

Since the German Offensive did not end until late on 26 December, it is believed desirable to correct these report figures by adding 10%. (See attached Comparison of Computations and Partial Report of Major Battle Losses.)

Except where obviously erroneous, or where no figures are given, the corrected report figures have been used to show the withdrawal losses for the First Army on the Spread Sheet/Consolidation. The computation figures are retained, however, and are shown in comparison with the report figures for two reasons:

- (1) Although further search will probably reveal the T/A figures for First Army, these were not discovered in the time available for this report; thus the computation was necessary to ascertain these T/A figures as closely as possible.
- (2) The comparison of the computations and the corrected report figures reveals a surprisingly close correlation. Of the 12 items in which comparisons are possible, 5 are within 10%, 8 are within 12%, 9 within 16%, and all 12 within 40%. Of the three largest deviations, one (1903 rifles) is in a relatively unimportant, special purpose item. The other two ( $\frac{1}{4}$  ton and  $2\frac{1}{2}$  ton trucks) are fully explicable in terms of circumstances of combat not accounted for in the computation process. (This was the rapidity of movement during the period of August-September, and the relative lack of movement in November, January, and February, a though all these months were lumped together to obtain monthly averages.) Thus the discrepancies shown between the calculations and the reported figures may provide a useful starting point for further investigation leading to closer approximation of wearout losses of vehicles due to distances traveled.

	A	В	C	D	E	F	G
	Total Lost 1 Aug-22 Feb	Total % of T/A Lost	TIA*	% Lost in Dec		Number Lost in Aug-Nov & Jan-Feb	Monthly Average
1. Truck, ½ Ton	3734	34.2	10,918	10.76	(CxD) 1175	(A-E) . 2559	( <u>1/6</u> F) 427
2. Truck, 2½ Ton	1537	10.7	14,364	4.36	626	911	152
3. Tank, Medium	1106	97.5	1,134	34.15	387	719	120
4. Carbine	10534	7.18	146,713	2.8	4108	6426	1071
5. Rifle, .30 BAR	3301	150.3	2,196	42.4	931	2370	395
6. Rifle, .30 Ml	17355	17.54	98,945	5.5	5442	11913	1985
7. Rifle, .30 M	560	6.66	8,408	1.99	167	393	66
8. Machine Gun	3081	71.9	4,285	28.0	1200	1881	314
9. Howitzer, 105 mm	113	15.38	741	9.9	73	40	7
10. Howitzer, 155 mm	23	9.68	238	4.7	11	12	2
ll. Mortar, 81 mm	382	74.2	515	32.2	166	216	36
15. Generating Unit, MS	44	9.87	446	7.1	32	12	2
X. Tank, Light	262	31.9	821	9.36	77	185	31
XX. Gun, 155 mm	6	4.9	122	1.64	2	4	.67

 $\frac{\text{TIA}}{100} = \frac{\text{Total Lost}}{\text{Total % Lost}}$ 

-	! E ! F		G	Н	I	J.		
	Number	Number Lost in Aug-Nov & Jan-Feb	Monthly Average	Proportionate Loss for 1-15 and 27-31 Dec	Loss for 16-26 Dec	& 27 Dec-22 Feb		
	(CxD)	(A-E)	(1/6 F)	(2/3 G)	(E-H)	(A-I) or (F+H)		
	1175	. 2559	427	284	891 .	2843		
N	626	911	152	101	525	1012		
	387	719	120	80	307	799		
	4108	6426	1071	714	3394	7140		
ī	931	2370	395	263	668	2633		
	5442	11913	1985	1322	4120	13235		
9	167	393	66	44	123	437		
	1200	1881	314	210	990	2091		
	73	40	7	5	68	45		
, .	11	12	2	1	10	13		
2	166	216	36	24	142	240		
1	32	12	2	1	31	13		
36	77	185	31	20	57	205		
64	2	4	.6	7 0	2	4		

### Comparison of Computations and Partial Report of Major Battle Losses

First Army, December, 1944

1	Computations	Partial Report i6-25 Dec	Report	% Deviation from Corrected Comp.
1. Truck, ½ Ton	891	1345	1480	-39.8
2. Truck, 2½ Ton	525	668	735	-28.6
3. Tank, Medium	307	242	266	+15.4
4. Carbine	3394	2764	3040	+11.6
5. Rifle, .30 BAR, M1918	668	590	649	+ 2.9
6. Rifle, .30 Ml	4120	4251	4676	-11.9
7. Rifle, .30 M1903	123	81	.89	+38.2
	990	882	970	+ 2.1
8. Machine gun, .30	68	65	72	- 5.6
9. Howitzer, 105 mm	10	8	1 9	+11.1
10. Howitzer, 155 mm	142	193*	     	
11. Mortar, 81 mm	1 142	964	1060	
12. SCR 300		2	2	
13. SCR 603		823	905	
14. SCR 610				
15. Generating Unit M-5	i 1	17	52	+ 9.6
X. Tank, Light	57	47		0.0
XX. Gun, 155 mm	2	2	2	1 0.0

<sup>\*</sup>Ordnance report shows a total of 166 lost in all of December. Report figure is presumed erroneous.

## Attachment 2

Radio Set, SCR-608 Withdrawal -- Loss Per 100 Casualties 100. 10. .1 9 .01 8 001 25th 28th lst 7th IVISION ARMY

(Corrected)

(19179-1700)		FIRST	ARMY			FIFTH ARMY	
	- T/A*	195 Days ATTACK	11 Days WITHDRAWAL	206 Days TOTAL	*A/T	329 Days ATTACK	373 Days TOTAL
1 Truck, ½ Ton 4x4	918		1480	3734	6,805	1821	1983
2 Truck, 2½ Ton (all types)	14,364	802	735	.1573	9,746	1760	1909
3 Tank, Medium	1,134	840 .380%	2.152%	1106	532	560	588 .296%
4 Carbine, .30, Ml	146,713	7454	3040	10534	73,639	4447	4920 .0179%
8 Rifle, .30, BAR, M1918	2,196	2652 .619%	649 2.687%	3301	2,939	1897	2038
6 Rifle, .30, Ml	98,945	12679 .086%	4676	17355 .085%	54,000	7797	8065
7 Rifle, .30, M1903 Series	8,408	471 .029%	89	560 .032%	16,684	4399 .0801%	4493
8 Machine Gun, .30 (all types)	4,285	2111	970	3081 .349%	2,636	1591	1706
9 Howitzer, 105 mm	. 741	41 .029%	72 .891%	113	328	49.	49.0401%
Zer, 155 mm	233	.0302%	.344%	23	211	29	.0813%
n, 81 mm	515	240	2,507%	382	430	272	288

6 Rifle, .30, MI	98,945	.056%	.430%	.085%		.0439%	.0400%	
7 Rifle, .30, M1903 Series	8,408	471 .029%	.0962%	560	16,684	4399	4493	
8 Machine Gun, .30 (all types)	4,285	2111	970	3081 .349%	2,636	1591	1706	
9 Howitzer, 105 mm	. 741	41 .029%	72 .891%	113 .0746%	328	49.0454%	49	
10 Howitzer, 155 mm	238	14	.344%	23	211	29	64	
11 Mortar, 81 mm	515	240 .239%	142 2.507%	382	430	272	288	
12 Radio Set, SCR-300			1060					
13 Radio Set, SCR-608			5 .					
14 Radio Set, SCR-610			506					
15 Generating Unit, M5	446	23	31.	44 .048%	 595	21 .0107%	23	
x Tank, Light	821	209	. 575%	261 .154%	329	236	.239 .195%	======
								1!!

\*TOTAL AUTHORIZATION

## ARMY MEAN VALUES - WWII ONLY

(Corrected)

#per 1000 man-days Gper 100 casualties		ATTACK	DEFENSE	WITHDRAWAL	TOTAL	
l Truck, ½ Ton 4x4	# Q	.03041	.00959	.22986 4.7434	.03552 2.2238	
Truck, 2½ Ton (all types)	# 4	.02478 1.4668	.00232	.10720 2.0708	.02419 1.6510	
Tank, Medium	ē.	.01175	.00291 .2415	.04484 1.0266	.01228 .7339	
Carbine, .30, M1(1)	#@	.11744	.11116 9.2392	.51280 11.2131	.12168 7.0478	
Rifle, .30, BAR, M1918	日	.05251 2.8546	.01831 1.5217	.10898 2.4423	.05357 2.8512	
Rifle, .30, M1(1)	# @	.17559 11.3956	.03532 2.9348	.66499 12.5175	.17734 10.8434	
Rifle, .30, M1903 Series(1)	#2	.02781 1.8011	.00828 .3884	.02311 .6299	.01981 1.6233	
Machine Gun, .30 (all types)	# [4	.02589 1.6959	.02557 2.1256	.16880 3.7550	.02949 1.8523	
Howitzer, 105 mm	# @	:00064 .0376	.00995(2) .3760(2)	.00995 .1822	.00089 .0495	
Howitzer, 155 mm	#@	.00031	.00205(3) .3665(3)	.00123	.00041 .0296	
. Mortar, 81 mm	# 0	.00396	.00459(3) .7588(3)	.02432	.00450 .2776	
Radio Set, SCR-300	# @	.01383	.00726	.15219 2.8963	.01419 1.0903	
Radio Set, SCR-608	# @	.00012	.00029	.00060	.00024	1
Radio Set, SCR-610	#	.00283	.00087	.12804	.00322	
Generating Unit, M5	#@	.00030	.00021(3) .0373(3)	.00470	.00041	

	9	2.8340	1.321			
6 Rifle, .30, Ml <sup>(1)</sup>		.17559 11.3956	.03532 2.9348	.66499 12.5175	17734 10.8434	
7 Rifle, .30, M1903 Series (1)	# @	.02781 1.8011	.00828 .6884	.02311 .6299	.01981 1.6233	
8 Machine Gun, .30 (all types)	# 6	.02589 1.6959	.02557 2.1256	.16880 3.7550	.C2949 1.8523	
9 Howitzer, 105 mm	# 3	:00064 .0376	.00995(2) .3760(2)	.00995 .1822	.00089	
10 Howitzer, 155 mm	# @	.00031 .0212	.00205 <sup>(3)</sup> .3665 <sup>(3)</sup>	.00123	.00041 .0296	
ll Mortar, 81 mm	# 2	.00396	.00459(3)	.02432	.00450 .2776	
12 Radio Set, SCR-300	#10	.01383	.00726 .6039	.15219 2.8963	.01419 1.0903	
13 Radio Set, SCR-608	# 0	.00012	.00029	.00060	.00024 .0181	
14 Radio Set; SCR-610	#	.00283	.00087	.12804 2.4019	.00322	
15 Generating Unit, M5	#@	.00030	.00021(3)	.00470	.00041	
x Tank, Light	# @	.00291 .2064	.00262 .2174	.01018	.00292	

(1) Based on assumption that Seventh Army figures included First French Army for all except withdrawal.

(2) Data unavailable. Factor for man-days based on withdrawal; factor for casualties based on attack rate x 10.

(3) Based upon data for "rest" and " other" postures of Fifth and Seventh Armies.